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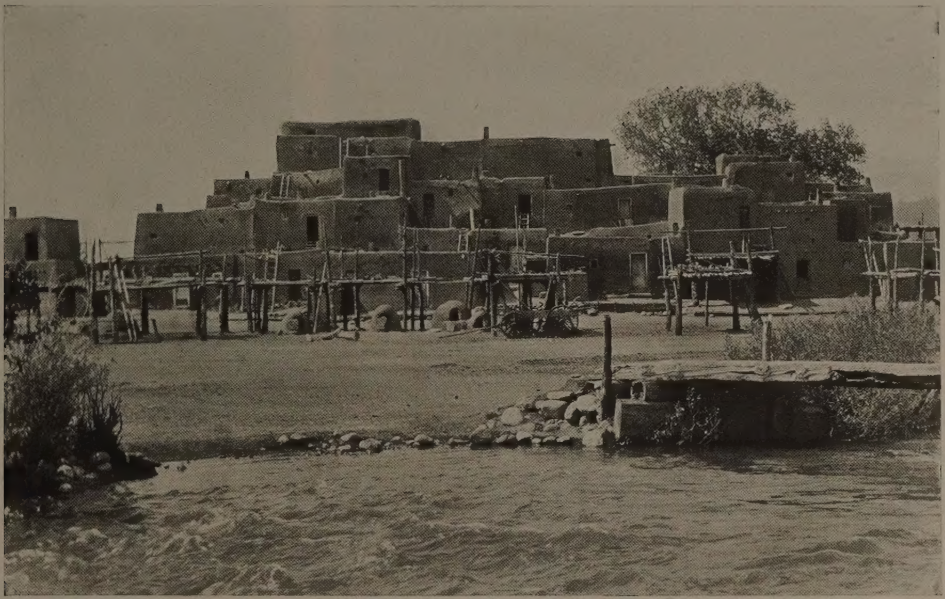


Indian Pueblo *Taos, New Mexico*

Pueblos and Adobe in New Mexico

By Elizabeth Palmer Milbank

NEW MEXICO is a land where there are three typical races—excluding the "hundred per cent American." There are nine thousand Pueblo Indians, peaceful, fixed, house-dwelling and home-loving tillers of the soil; ten thousand Navaho Indians, sullen, nomad, and horse-loving vagrants of the saddle, and lastly the Spanish-Americans or Mexicans, inbred and isolated, shrunken descendants of the Castilian world-finders. Yet with them all there has lasted through centuries a style of architecture peculiar to the Southwest, the aboriginal adobe art that is both unique and beautiful, and over which is thrown the glamor of ancient peoples and historic legends.

Santa Fé, the New Mexico capital, claims to be the oldest city in the United States, on the grounds that St. Augustine, Fla., was entirely destroyed by fire after Santa Fé was established. In Santa Fé are preserved a number of historic buildings. Among these are "the oldest house in the United States"—not in itself a thing of beauty—and the mission church of San Miguel which was built in 1636.

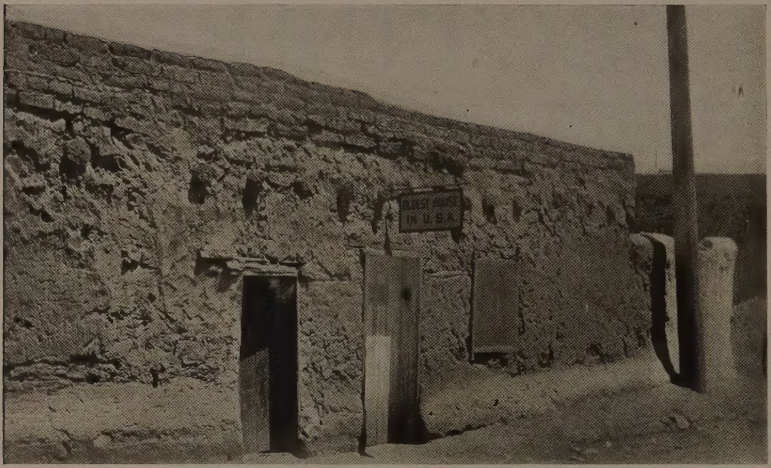
This native architecture of New Mexico is as distinct a variation of the Moorish type, brought to Mexico by the Spanish and thence into New Mexico by the Franciscan friars, as was the California type, and was the first developed, most of the churches having been built long before the Franciscans entered California.

The adobe is the easiest made and the most habitable of dwellings. It is cool in summer and warm in winter. The material is in one's own yard, which suffers nothing by having the top taken off.

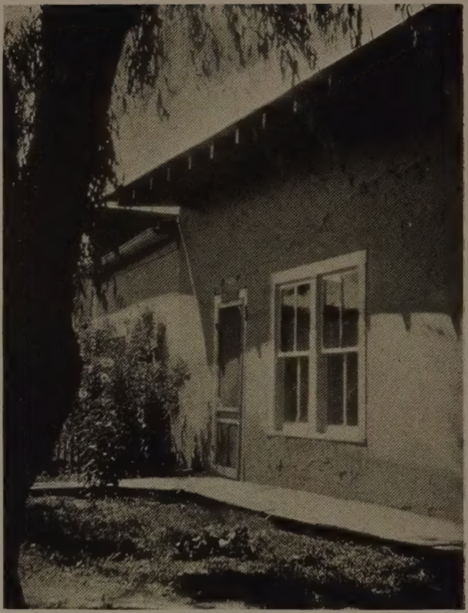
The adobe house in the making is a box boarded with sods 2 feet long, 8 inches wide, 4 inches thick, cut, turned over and left to dry out, then laid one upon another in a mortar of their own mud. The houses are floored with clay, roofed with peeled pine-trunks crossed with branches that in turn are thatched with hay, and that buried under a foot of gravel. Yet the possibilities of adobe are endless. Attractive residences, churches, and reputable business blocks are made of the adaptive "mud brick."

The native Pueblos—pueblo means town and applies to all Indians who live in houses in apposition to the tribes such as the Navahos and Apaches, who live in tents and tepees—under the directions of the priests carried out their own art with no violence to the foreign style given them. Their material was the earth under them, the forests near them. Their tools were of the crudest. The buildings themselves were raw and crude, but had a touch of æsthetic feeling and were imposing in their simple strength.

The *Palacio Real*, the home of the original gover-



The oldest house in the United States, Santa Fé, N. M.



Adobe house of the first white governor of New Mexico

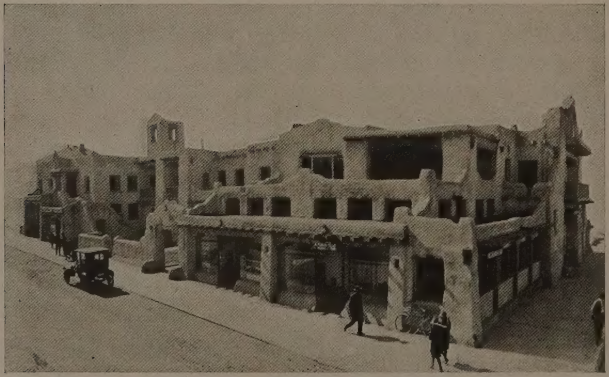
nors of New Mexico, conforms exactly to the domestic and community architecture of the Indians though constructed for civil as well as domestic uses. The Old Palace, the husk of past romance and glory, with its gory tales of the uprising of the native tribes in 1860, extends the entire southern side of the business square in Santa Fé. So cool and quiet and peaceful is it now that one can hardly conceive of it as a place of dire tragedy and scenes of cruelty such as only an Indian country can stage. It was here Lew Wallace lived when Governor of New Mexico, in 1878, and here he wrote the last three chapters of "Ben Hur."

After the Palace came under American control, its various occupants, blind to its striking originality, ruined it with improvements. When there came a recognition of New Mexican architecture and the School of American Archæology was established and given control of the Old Palace, the original type was reclaimed as far as possible with conformation to modern improvements. The ancient vigas—beams—were laid bare and the old natural lines of doors, windows, and fireplaces were restored. The dirt floor, the mica windows, and the festoons of dried Indian ears that formerly decorated the portals were irrevocably things of the past.

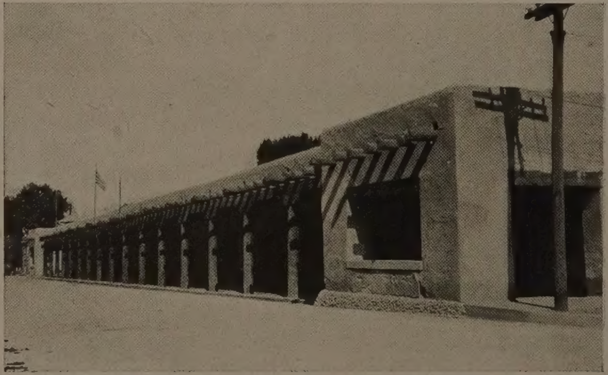
In pueblo architecture there is no rigidity of lines, no absolutely square corners, no fine precision of wall, none of the strictly mathematical conformity to our machine civilization. If there were anything of stiffness or formality about these missions and pueblo buildings when they left the hand of the builder, Nature, the great harmonizer, brought about the final unity by her constant erosion of plastic material softened by the consequent repairs with the same material.

Indian architecture is unique in bearing the closest relationship to the surrounding landscape. Its character is as dependent on the absence of precision as is the beauty of the natural architectural forms abundant in this vicinity.

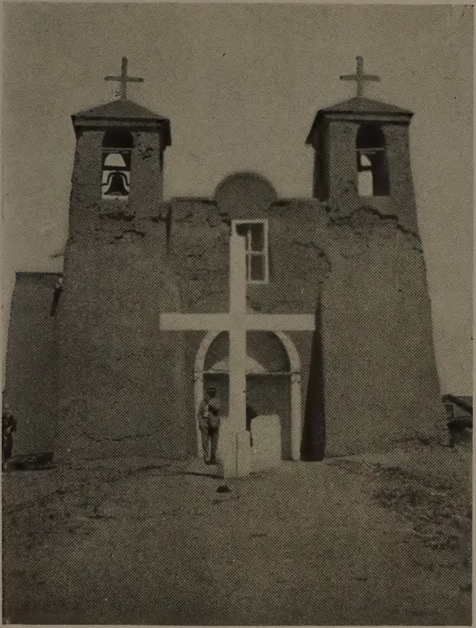
Just across the street east from the ancient and history-filled Palace is one of the latest buildings in Santa Fé, the New Museum, in which the architect achieved loveliness by adhering to the pure New Mexico mission lines.



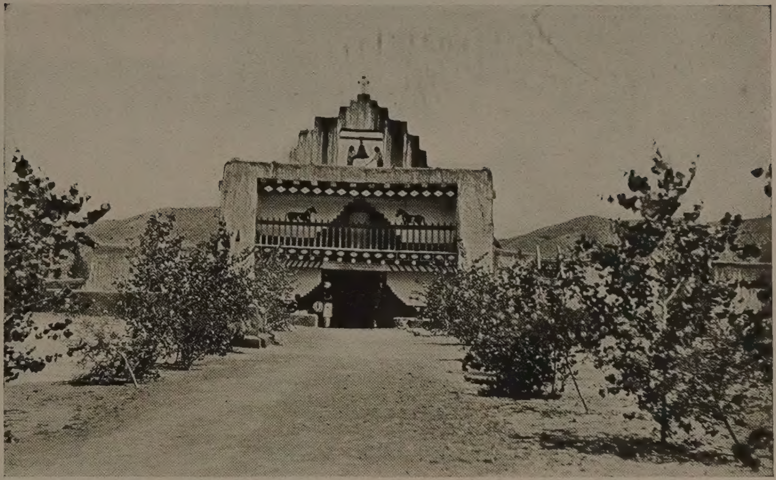
©Julius Gans *La Fonda Hotel, Santa Fé—a modern adobe structure that has a suggestion of the pueblo*



The Old Palace, Santa Fé, once the home of General Lew Wallace, then Governor of New Mexico



Adobe mission church, over two hundred years old, at Taos



Adobe mission church near the San Domingo Pueblo, N. M.

The outlines are terraced, plastic, flowing. There are no hard and stiff plumb lines or levels. The symmetry is that of mass, not exact form. From every vantage-point one sees a different architectural composition, a new charm, a different pattern and design, among which sunlight and ever-moving shadows play.

The lovely patio or inner court is in keeping with its massive battlements, its shady cloisters, its carved corbels, and primitive pillars and beams. The ceilings of the interior, the floors of the St. Francis auditorium, the benches, the St. Francis mural paintings, the lighting of the transept, the carving of the grilles, the reproduction of the heavy doors of Santa Clara—a destroyed mission—and of the Needle's Eye, all merge into complete harmony.

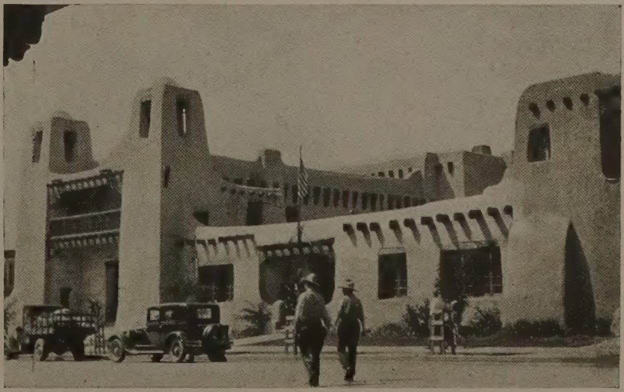
Other buildings in the New Mexico capital, of adobe and along these same architectural lines, are the new High School, the Sunmount Sanitarium, and the La Fonda Hotel. The homes in the artists' colony are all built of adobe and in many cases the artist is the architect and builder.

But it remains for Taos, an out-of-the-way small town of New Mexico, twenty-five miles from a railroad, to have what some regard as the most remarkable and picturesque architecture on the continent, two great pyramid adobe tenements: a strange, terraced, community home of the original pioneers, surrounded by abrupt mountains, rock-walled canyons, and sunburnt mesas freckled with sheep and goats.

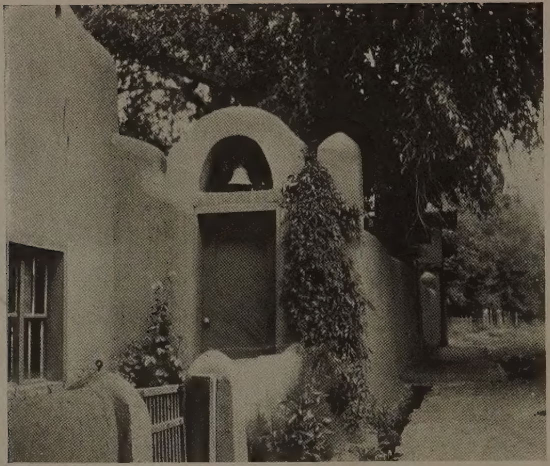
Taos is a primitive, unincorporated, charming, once-walled-in adobe town, founded late in the eighteenth-century. The Taos Indian pueblo, three miles from the town, is still the northernmost outpost to which pueblo Indian civilization ever reached. Here in this land of high places and high colors, their homes outline dun-colored walls against a turquoise sky, making striking and fascinating pictures, redolent of mystery, surprise, and Indian secrecy. They were first seen by the white race in 1541, by Francisco-Nuevo, a captain of Coronado's expedition.

When the first of the Indian tribe of Taos wandered over the mountains from the north and stopped where an eagle, embodying to the Indians the Spirit Above, dropped a feather as a sign that they had

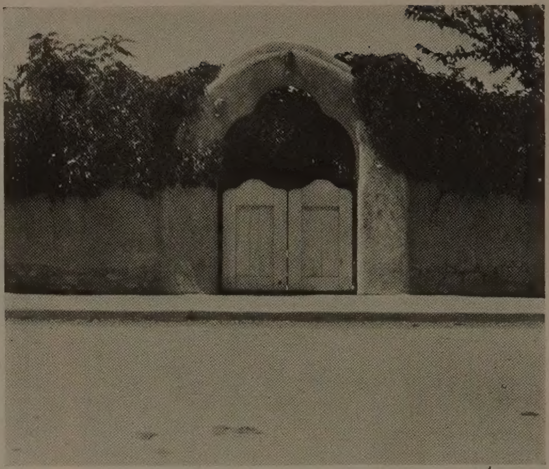
The luxurious adobe house of Albert Juan, an Indian who married a wealthy white woman



The New Museum of Art, modern adobe, just across the street from the Old Palace, Santa Fé



Entrance to the adobe house of Bert Phillips, artist, in Taos



Entrance to the adobe house of H. E. Couse, artist, Taos

reached the appointed place, the braves must have felt that prematurely they had reached the happy hunting-grounds, for the gods of rain and harvest had strewn the beautiful valley with lavish hand.

In their desire to reach upward in their glorious surroundings, and with their new religious zeal, they toiled with stone and adobe in the construction of their new dwellings. Their houses, built in the communal style, rise to a height of six stories. The pyramidal sides, with irregular block-like rooms, spread out toward the ground in giant steps, and in the golden light of a morning, or the glow of sunset, these great mud structures take on effects in color and light and shade that are truly beautiful. Even in midday the dull gray is splashed here and there with the vivid red of a blanket, the vermilion of chilli peppers or the brilliant colors of the women's shawls.

To protect themselves against the raiding Apaches the men of the pueblo built high walls of adobe, now crumbling ruins. Also for protection from these same roving savages the pueblo was built so that the only entrance to the different stories of the houses is by a ladder.

Taos itself, with its gay, insouciant medley of Mexicans, Indians and artists, radiates, throbs, and bewilders with its riot of color against the background of adobe. Almost without exception, not only in Taos but throughout that section of the country, every adobe house has window and door frames of a bright blue. Various reasons are assigned for this similarity of adornment. Some say it is symbolic of the ardent blue skies that arch the Southwest; some say it is symbolic of the turquoise—the largest turquoise mine in the world is thirty miles from Santa Fé—and some say it is the color of the Virgin Mary, and is put around the doors and windows to keep out the evil spirits.

That Taos, its people and homes, and the Taos pueblo retain so much of their originality and charm is due to the fact that, being more or less isolated, they have so far been unmolested by civilization.

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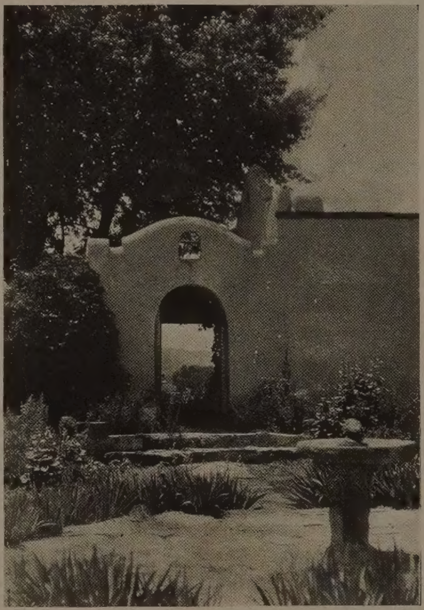
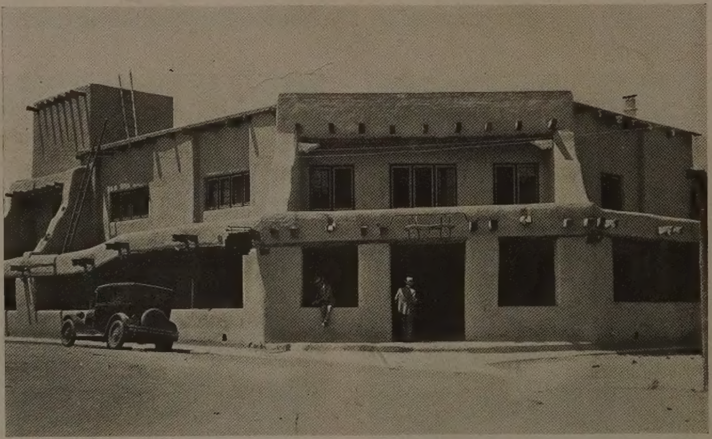


Garden wall and gate of Colonel Twitchell, Santa Fé



Don Fernando Hotel, a modern building of adobe along traditional lines, in Taos

The Detroit Institute of Arts

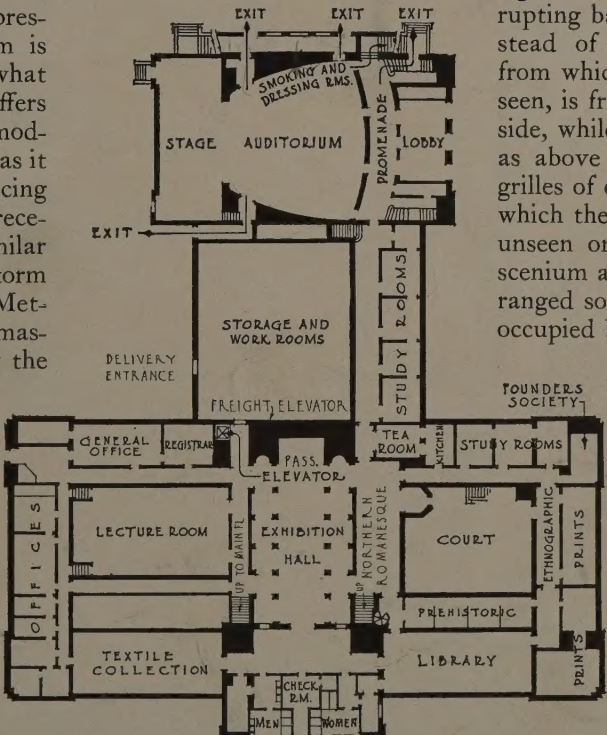
PAUL P. CRET, AND ZANTZINGER, BORIE & MEDARY, ARCHITECTS

Part Two—Conclusion

By Gerald K. Geerlings

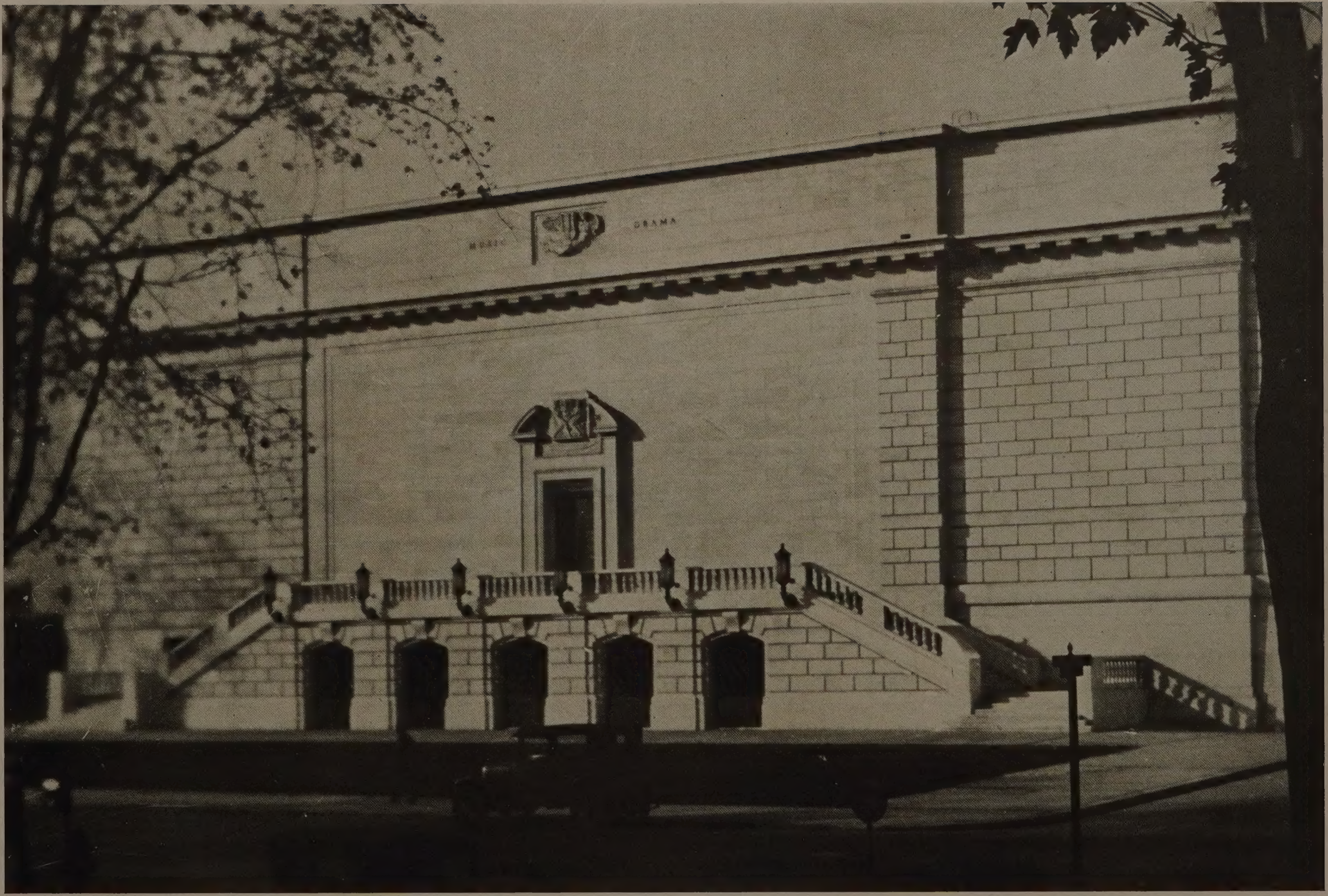
Stone bas-relief panel over side doorway to auditorium (page 66)

AFTER one sees the wonders of the museum proper he is not prepared for an additional surprise of beholding as enjoyable a theatre as the muses were ever invited to attend. When, after an architect has been put through all the paces of every known architecture from Peruvian through Italian rococo in a building, he is given an adjoining theatre to design, we should think that the natural thing to do, in order to have something left of his fee, would be to make one of the rooms suffice by enlarging or shrinking its attire. It must take worlds of enthusiasm and research to do hundreds of sketches of varying styles and not get weary. If we had found the theatre done in the manner of the main hall or a combination of any of the other rooms, it would have seemed but natural. But not so. It was like going to a baseball game and seeing a star player rotate through all the positions on the diamond, scoring premier honors in each, and then in the final frame to have him dismiss the entire team except the catcher and pitch a perfect inning. For enthusiasts of the "modern" in ornament and originality of expression, the Detroit auditorium is a splendid object-lesson of what may be accomplished. It offers splendid argument for the "modern" school and, paradoxical as it may seem, equal cause for rejoicing by the advocates for historic precedent. It is in a measure a similar case to the two mountain-storm water-colors of Turner in the Metropolitan Museum of Art—a master bringing into forceful play the studious experience of a lifetime. On the surface these have all the directness and freshness which the "modernist" likes to claim for his own, but which too often are used to mask the insecure footing and superficial training of the dilettante. Before the storm water-colors came the patient, careful studies of years; before this auditorium came the thorough understanding of every style from the Egyptian on through the nineteenth century. There is all the "new" quality expressed in the ornament which in isolated cases is press-agented and hailed as a new wonder in sculpture. If there were but a single panel exhibited in a bas-relief competition there might be a medal attached and great publicity attendant, but as there is so much wisely displayed ornament in fine feeling for scale and theatrical atmosphere, and since the entire composition makes up an integral whole in perfect good sense, probably no "modern" enthusiast will champion his cause with the splendid ammunition which the auditorium affords.

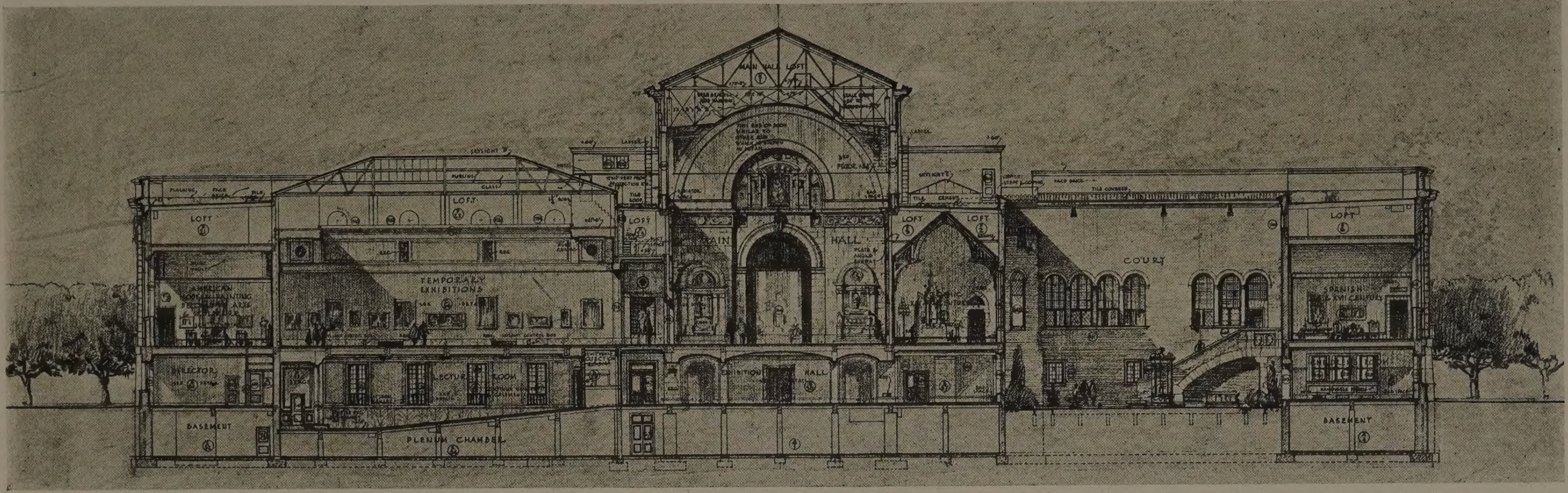


Ground-floor plan, with elevation toward Woodward Avenue shown at bottom

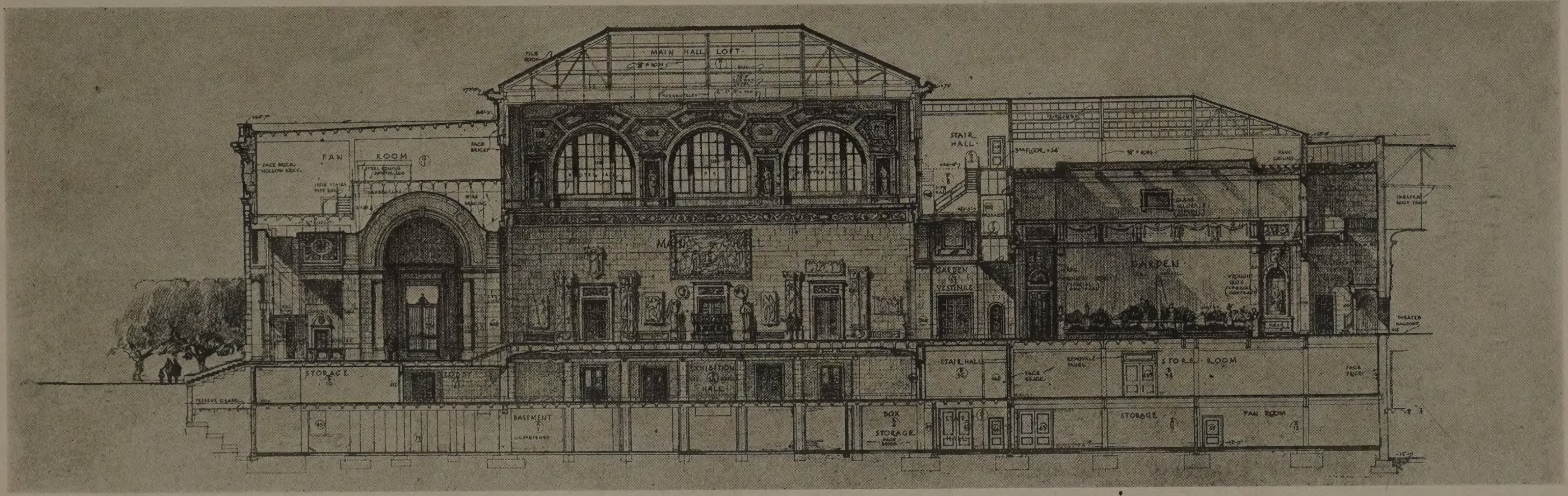
Prospective builders of new theatres could invest their time and railroad fare no more wisely than to visit and study the auditorium; they would discover, regardless of any preconceived ideas or prejudices, that here is incorporated the spirit of the stage. The interpretation of the proscenium and the disposition of the difficulty it always presents for maintaining the same scale as in the remainder of the theatre, not to mention the embarrassing sides of the theatre with the interrupting balcony, are all ably solved. Instead of the trite proscenium boxes, from which man cannot see but only be seen, is framed the organ console on one side, while on the opposite side, as well as above in the ceiling, are perforated grilles of composition ornament through which the organ music percolates. The unseen organ chamber above the proscenium and to the sides is skilfully arranged so that no useful space below is occupied by pipes, but at the same time the sound is modulated, regulated, or whatever happens to organ notes, so that the net result to the expectant ears of the listeners is thoroughly satisfactory. From an architectural standpoint it is very gratifying that by means of fine restraint in ornament and simplicity of treatment such an appropriately free and easy interior could be concocted. For so long we have taken it almost for granted that a theatre had



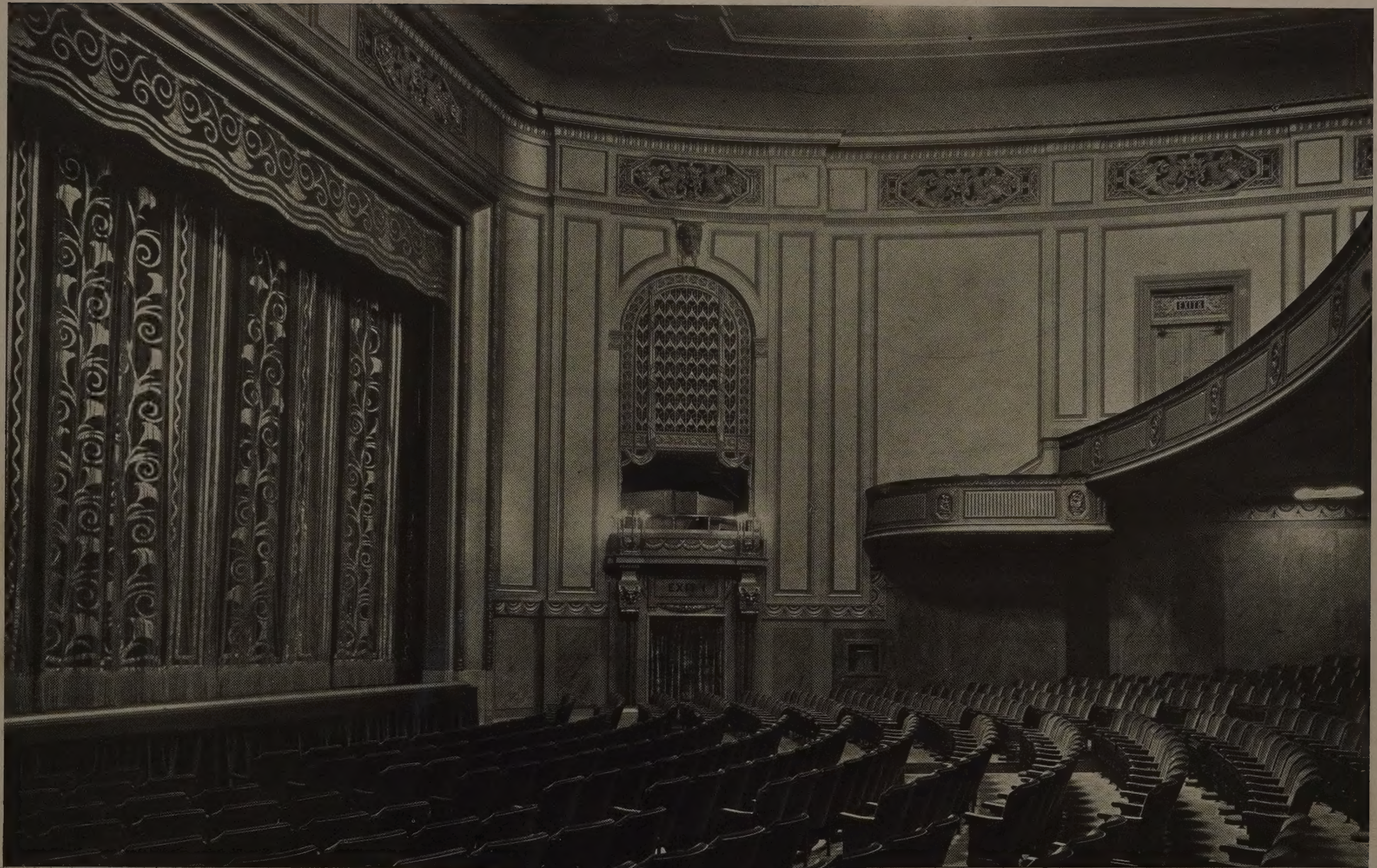
One of the most interesting features of the exterior, playing an architectural chess game with smooth surfaces against rusticated, solids against voids, and being in reality the side wall of the auditorium (page 65). The ground-level arches introduce a loggia for main-floor exits, while the exceptionally successful doorway, reached by the stairs, is one of the balcony-level exits.

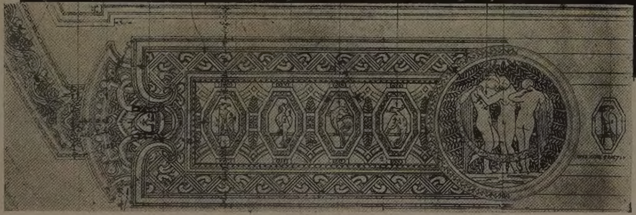


Cross-section taken through the main front portion, illustrating the various levels of the main and ground floors, main hall, outdoor court, and exhibition-rooms



Longitudinal section, illustrating the approach to the entrance hall, and the relative levels of the main hall, indoor garden, and auditorium

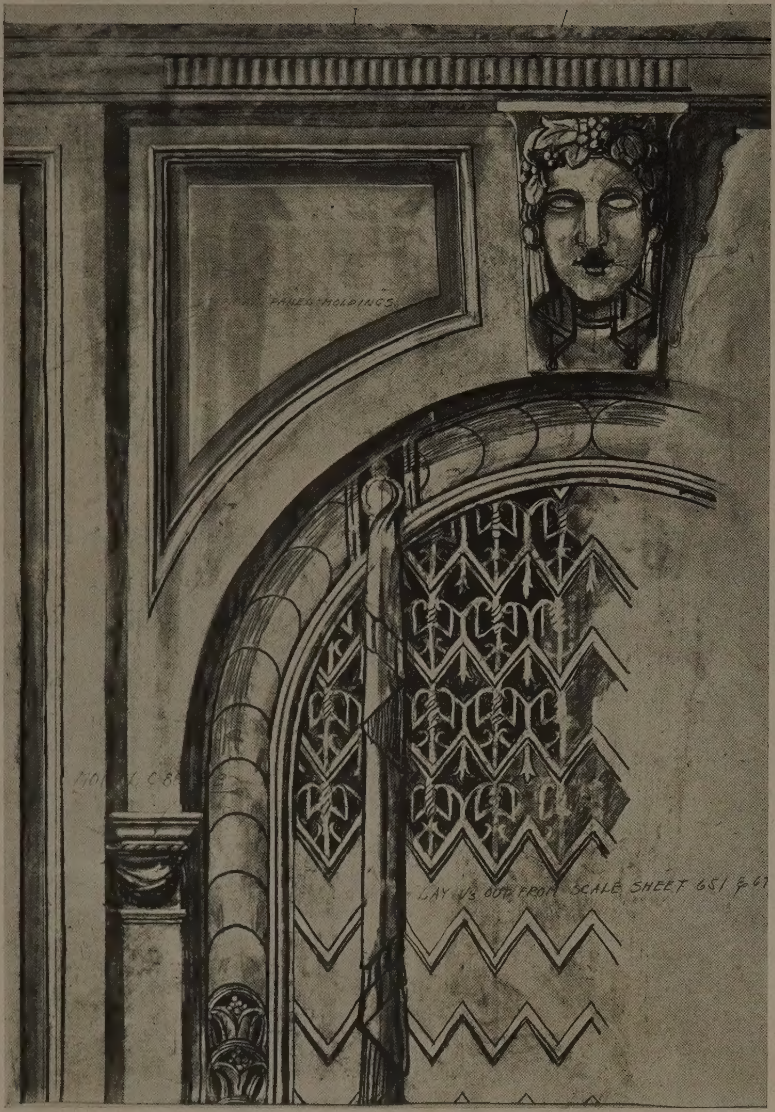




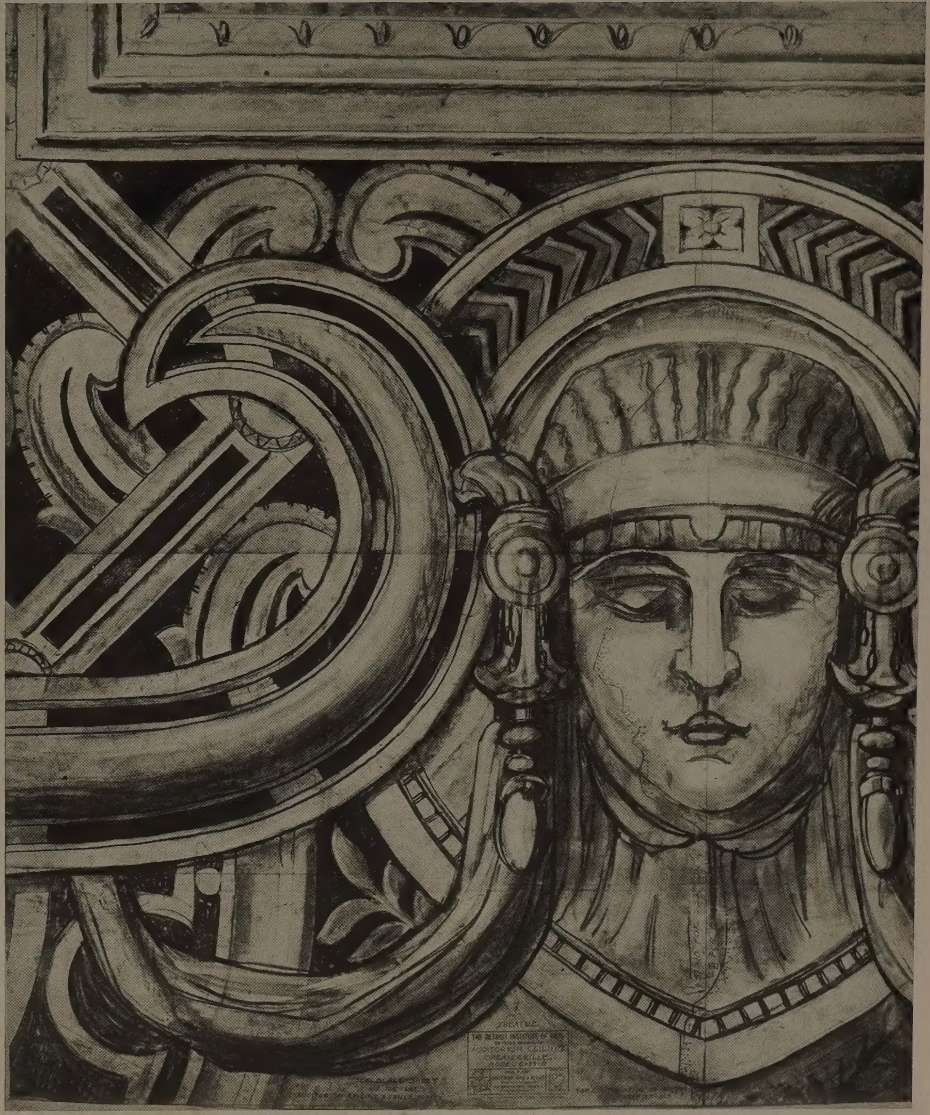
From working-drawing of pierced ceiling ornament in front of proscenium

Auditorium, looking toward proscenium and organ console. The harmonious yet festive color scheme, keyed up by the vermillion-orange seats and curtain, is not to be photographed but something to be seen and remembered

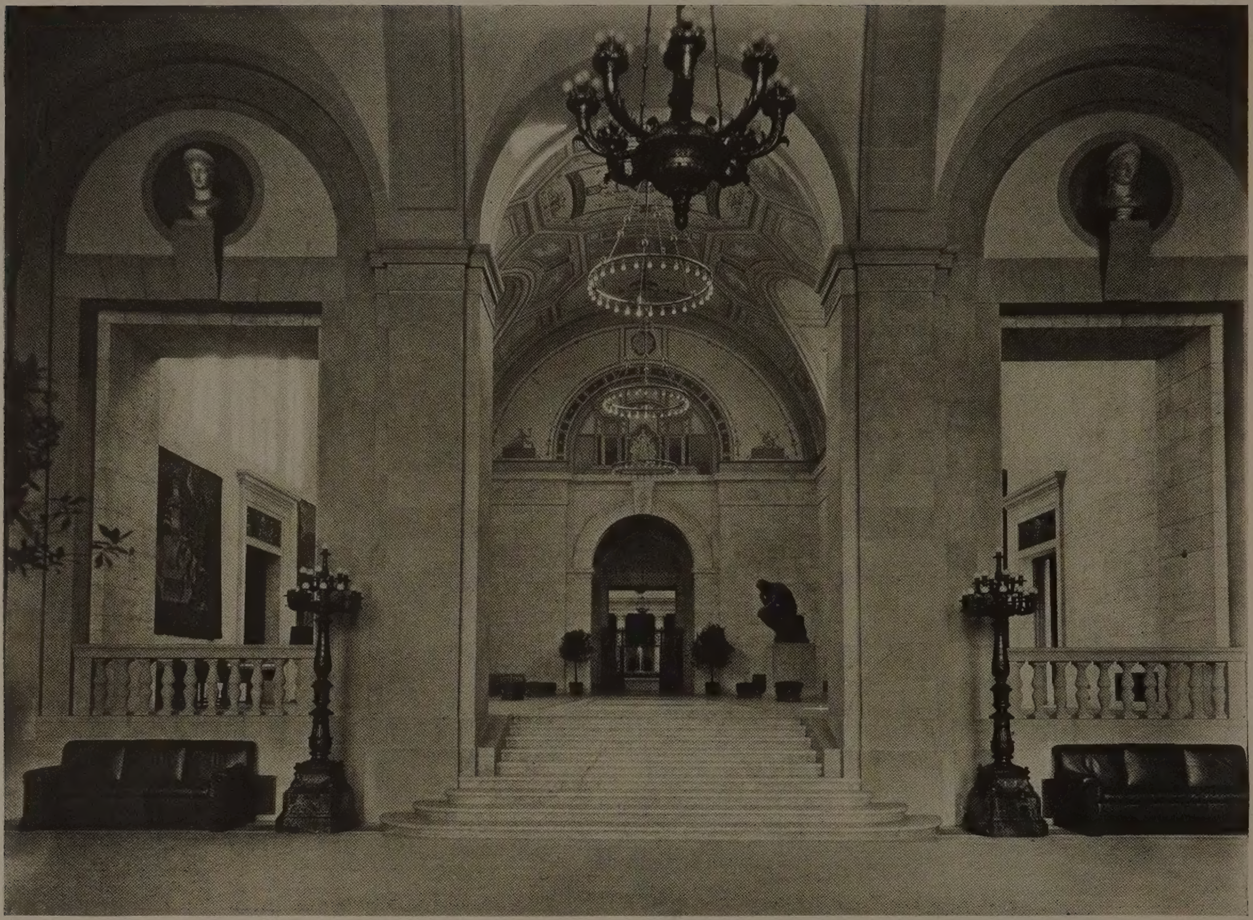
From working-drawing in charcoal for the vent grilles in frieze


PANEL MOLDINGS
LAY V's OUT FROM SCALE SHEET 651 & 67

Reproduction of full-size detail, drawn in charcoal, of grille and head above organ console in auditorium (photograph on page opposite)



From full-size detail, in charcoal, of portion of pierced ceiling ornament in auditorium (lower left corner of page opposite)



View on main axis of entrance hall, looking through main hall with its tapestries, Rodin's "Thinker," and Roman-bath ceiling, toward indoor garden and playing fountain beyond. The arch visible just behind the jet of water opens into the balcony level of the auditorium

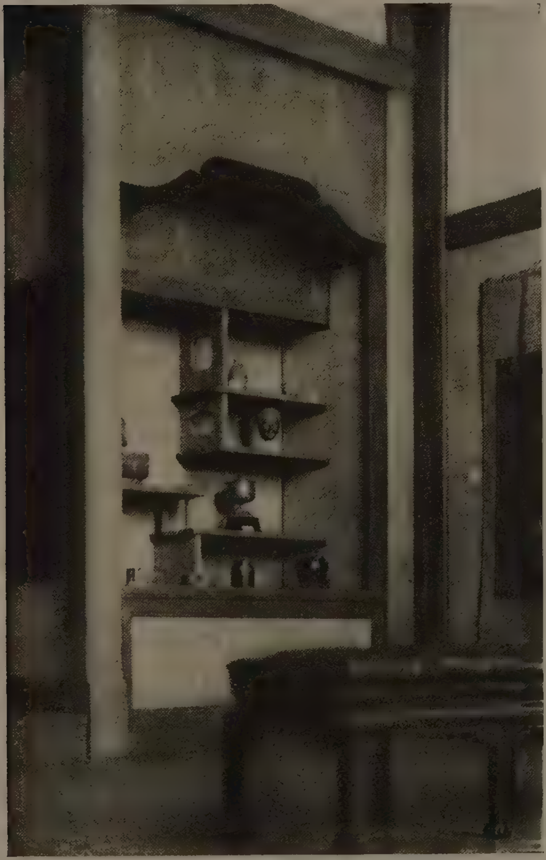
to be "paper architecture" in the grand manner of Beaux-Arts embroidery, trite Vignolanized orders, or bizarre omelettes of ornament without reason or repose. It is reassuring to know that here is a solution which is neither an *École projet*, a copybook exercise, nor a mad scramble of unstudied forms, but a sane, orderly, sprightly, colorful, and playful creation born of logic and hard work. In being shown hundreds of sketches for the various rooms of the museum, when the drawers of auditorium sketches were opened it was with an apology that these were not quite satisfactory to Mr. Cret. Knowing that he was ever a hard taskmaster on himself, we did not stop to investigate at the time. Gazing enthusiastically from the balcony, the stage, or the first-floor entrance, however, and finding no fault whatsoever, we were mentally one continuous question-mark. If Mr. Cret were not satisfied with his handiwork, what would it be if he were?

The exits of the auditorium are a revelation. From the orchestra level they are ample and afford no great wonderment except that to the right of the auditorium they open into an inviting loggia. It is the balcony which offers the exciting disclosure. When the delicacy and color of the ornament, for that matter the entire *parti*, have flooded one's appreciative capacities, there comes the means of exit from the wide cross-aisle at the bottom of the balcony. To the right it opens out, not on a mean fire-escape of iron slats or concrete steps, but on a wide terrace with monumental stairs (see photograph, page 66). At the other end of the cross-aisle, the left wall of the auditorium, one is even more dumfounded, on opening the door, to find the sparkling garden with its fountain, goldfish, and orange awning.

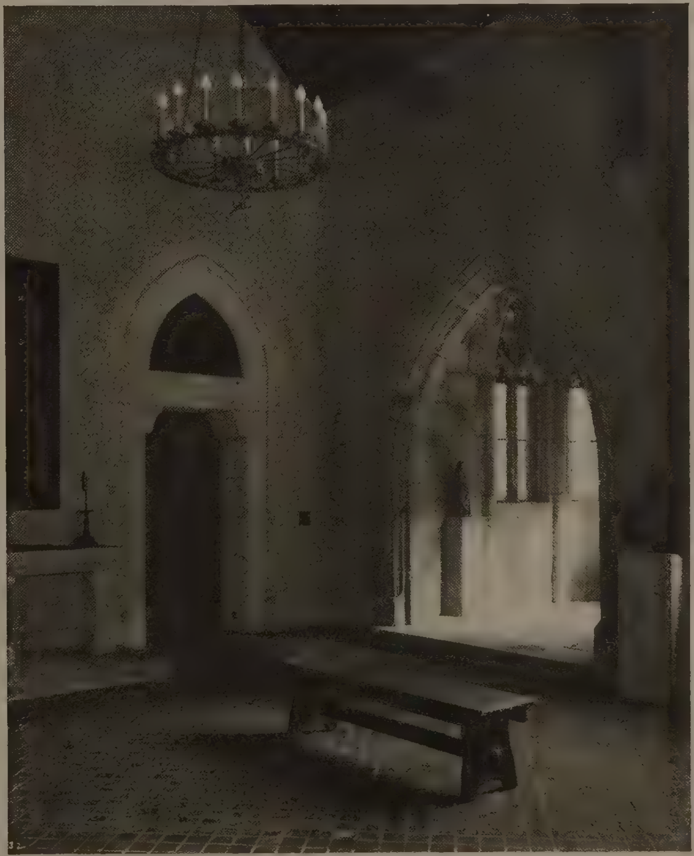
The problem of direct or overhead lighting is one of the most vexatious in a museum, and one supported by authoritative protagonists of opposite solutions. As Mr. Cret points out, the fact that opinions should be diametrically opposed indicates that there must be something in favor of both. He has recognized the value of the skylight in the large temporary exhibit galleries at the left of the main hall, but in the other rooms, averaging about 24 by 28 feet, the light comes directly from windows. It is his belief that the visitor is less fatigued by such museums as the Pitti Palace, Florence; the Cluny and Carnavalet, Paris; Ryks Museum, Amsterdam; and Maison Plantin, Antwerp, than in the formal "box plan," with its rows of rooms uniformly attached to connecting corridors. Although the skylight may give a more uniform light than windows, he points out that but few paintings demand the same light and that most of them are seen to better advantage under the circumstances similar to an artist's studio where they were painted, or in a room approximating the place originally intended to be enriched. The double thickness of skylight glass makes the light greenish and slightly dull, and gives the visitor the sensation of being "drowned at the bottom of an aquarium," as Mr. Cret colorfully expresses it.

Mr. Cret's conclusion concerning many modern museums is best stated in his own words, "that the mistake has arisen from the desire to create the so-called ideal conditions, conditions which, aiming to be suited to all cases, are not really adapted to any, and are mediocre for all. We have put the visitor in a patent light without shadows or reflections, in an unvarying temperature, between walls smooth as those of a hospital and painted in a neutral tone, without ornament and with nothing to distract him from his task; and we are naïvely astonished that after a little while the ungrateful creature yawns and wishes to go out on the street!"

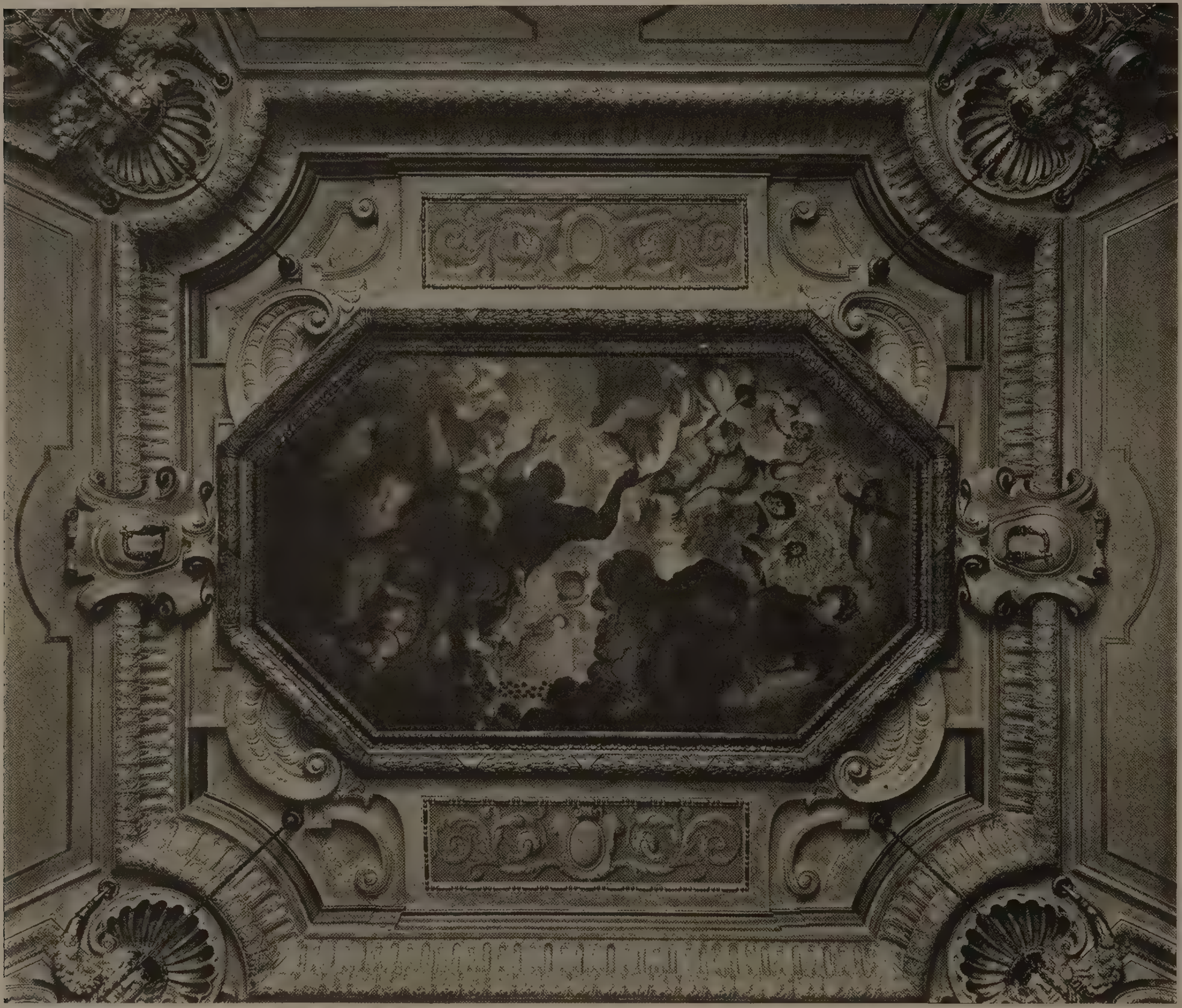
In an interview with Mr. Cret he laid particular stress on what he considered the subject of prime importance in any given architectural problem if it be so solved as to be a work of art: the plan. "Generally this is not given sufficient consideration nor its importance fully realized," he said in his earnest way. In his atelier he has always refused to look further at a *projet* until it has arrived at a simple, justified scheme of planning; he has maintained that a good plan automatically produces a foundation of what may readily be developed into a creditable façade and section, whereas a poor plan eliminates these possibilities by denying the exterior elevation the right to express frankly the function of what goes on behind. The success of the Detroit museum, which the lay public assuredly feels but does not stop to analyze, lies chiefly in this virtue of plan study. Juggle the elements about without concentrated study and either the "academic," dry-as-dust lockstep of rooms results, with the main hall and garden useless extravagances, or otherwise the period-room sequence idea goes by the board. Without the study of plan which Mr. Cret invested on this *parti* it would be like a clock put together by inexpert hands—too many small parts left over and, if going at all, not keeping time. The Detroit mechanism has been professionally assembled, and has needed no alarm or chimes to advertise that it *is* going; the auditorium is in constant demand and is rented out several nights a week, and if there were turnstiles to the museum proper



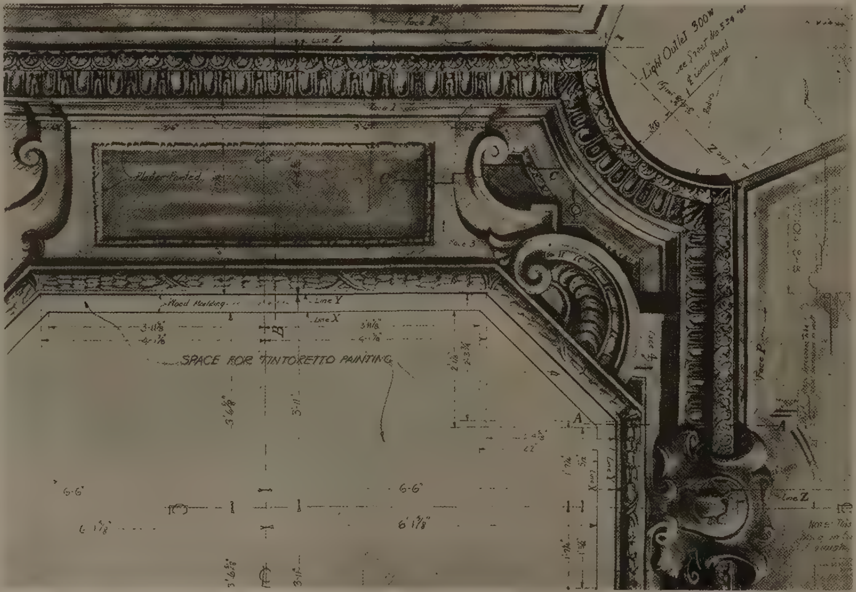
One of the Japanese rooms—the walls below covered with silvery grass-cloth on gold paper backing, while cream-white holds forth above and on the ceiling, interrupted by black and gold wood panel members



The Northern Gothic hall, thirteenth to fifteenth century, looking into the Early Christian, Byzantine, and Italian Romanesque room on the left and into the chapel from the Château de Lannoy, Herbéviller, at the right



Above, an Italian high Renaissance room, sixteenth century, enriched by a Tintoretto ceiling originally in the Palazzo Barbo a San Pantaleone, Venice. It represents "a heaven with gods and symbols of the things about which the minds of men dream during sleep" (fame, love, and wealth)



From charcoal working-drawing, showing how accurately the ornament was studied and modelled. It left but little guesswork for the modeller and simplified the color scheme determination (which, thank goodness, there are not!) they would already be crystallized with weariness.

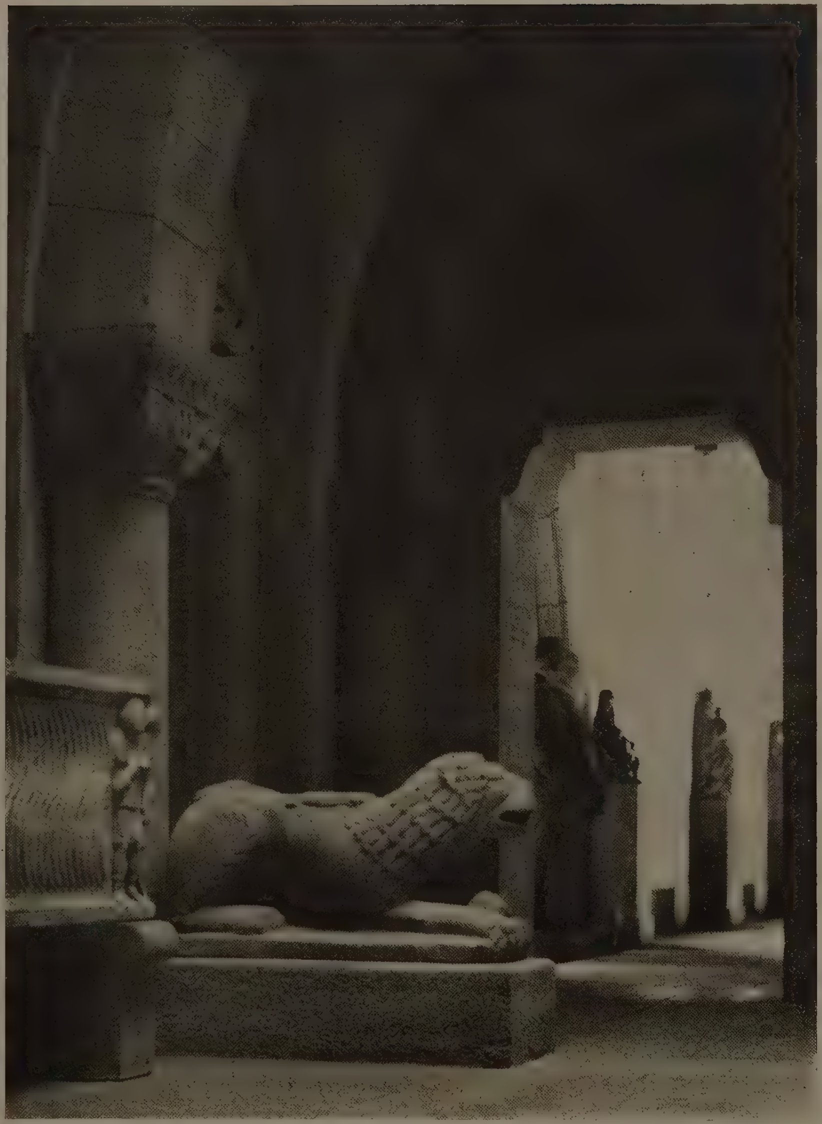
Without any enthusiastic exaggeration it can be said that the plan and scheme of the museum are certain to affect succeeding buildings of this class. The very popular little American Wing in the Metropolitan Museum of Art, New York City, undoubtedly rejoices at its new big brother which has grown up not as intensively American but more extensively world-wide. There are admittedly certain disadvantages in arranging a group of rooms to house a definite collection which will not permit very liberal interchanging, but by the time an institute has grown over a period of years it has a fairly good idea of what its needs will be. A new bequest may of course require readjustment, but the plan of the Detroit museum, if a change in nationality of rooms were absolutely essential, could be manœuvred without serious alteration. Details and color-scheme, ceiling forms and panelling might require a new dress, and even a different sequence of rooms, but such an imaginary bequest, if too carefully prepared for, reverts to the old tiresome method of arranging unvarying boxes along endless corridors, either making the public suffer from ennui or inviting its aversion.

Some museum authorities contend that to exhibit properly a work of art all else must be so subservient that nothing distracts the attention of the visitor. That presupposes that all visitors are earnest students of art who can mentally depict the *objet d'art* in its original surroundings and, in spite of dreary colors and endless pedestals or frames, conjure up colorful tapestry backgrounds, fine furniture, and gay costumes. Perhaps such persons do exist who can, without voluminous libraries in hand, put their memories and imaginations through such gymnastics without fatigue as they traverse the type of museum termed a "cemetery of art." We cannot help but feel that the public, even the most intelligent, cannot do that, and as a matter of fact sees only what is before it. In the Detroit Institute the hope has been to permit even the student to appreciate better the reasons for certain types of art, to grasp the continuity of development, and to visualize the relations of color and characteristics between various branches of art within the same period. An unprejudiced visitor can scarcely come to any other conclusion than that it has most wholeheartedly succeeded.

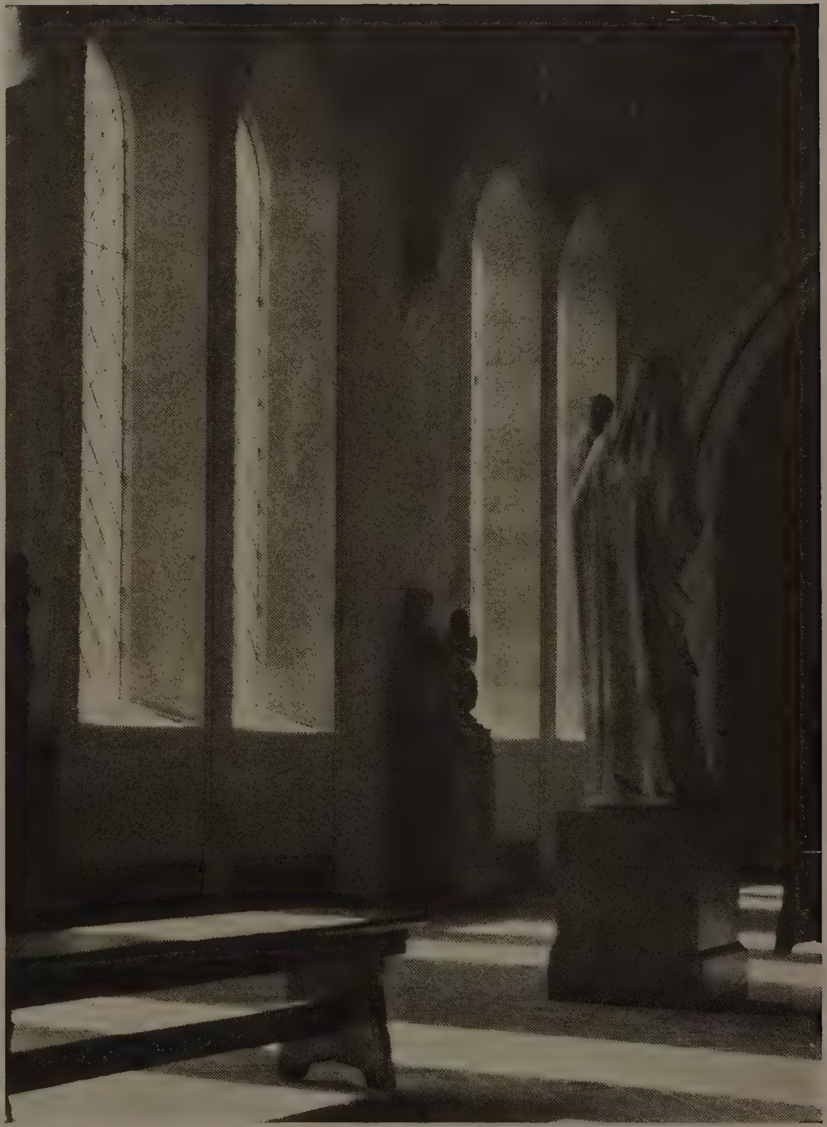
The old and "new" excavations at Pompeii are similar contrasts as between the "box" plan and the Detroit museum. The "old" excavations offer nothing more to the visitor than the barren floor and wall-base remains. In order to piece together a Pompeiian domicile he must carry the plan he saw at the historic spot in his mind while he hies himself to the National Gallery at Naples, with its priceless treasures. There he wanders through gloomy corridors, endeavoring consciously to catch up one wall decoration here and another there, scurrying into another room where he finds cooking utensils, in another, lamps and perhaps a table. If, without the aid of a d'Espouy restoration, a comprehensive guide-book and a few glasses of *spumanti*, any one can perform such an artistic patchwork, it is because he has come from a long line of archæological forebears. We ordinary mortals get far more from the so-called "new" excavations where, as far as possible, all the discoveries are left *in situ*, or have had walls and ceilings restored. Here one can see how the stage appeared as the actors went about their business. Utensils, lamps, and furniture require no explanation. No wall decoration, as we remember it, was "over exhibited," and therefore diminished in our appreciation because we saw it in its native habitat. In fact we derived considerably more notions and better adhering ones from the one reconstructed Pompeiian house than in the entire mileage of exhibits in Naples. The quality of the wall decorations in the National Museum are probably better than those remaining in Pompeii, but their fragmentary shreds were never satisfactorily woven together into a well-fitting garment by the looms of our dusty brain.

And so at Detroit. Although all of its citizens are reported to operate automobiles and no doubt have travelled far and wide, their meanderings may not have taken them all to Europe—in which case it must be a tremendous boon to get some idea of how a Tintoretto ceiling decoration (page 72) was made for a purpose and was anchored to the architecture of the room. So too with the Early Christian, Byzantine, and Italian Romanesque room (page 74)—it must be of incalculable aid to the student not having seen Salerno or Bari to observe that the archaic-looking bow-wows, with their locks in curlers, do not look agonized habitually because they are lonesome, but are merely hungry for some of the lesser fowl which perch in capitals, or captive men who stand unarmed at corners of sarcophagi. The Northern Gothic Hall, with its hammer-beam trussed ceiling and its long Gothic windows, must give a certain unconscious conception of the reasons underlying the sculpture, and consequently make it seem more understandable. In two instances rooms have been taken bodily into the fold, the chapel from the Château de Lannoy (page 71), entered from a corner of the Northern Gothic Hall and projecting into the court, and in the American sector the rooms from Whitby Hall, a Colonial mansion of Philadelphia built in 1754 by Colonel James Coultas (and about to be demolished two years ago). Of the latter the woodwork of two ground-floor rooms, the handsome hallway and staircase, were incorporated intact as they were originally built.

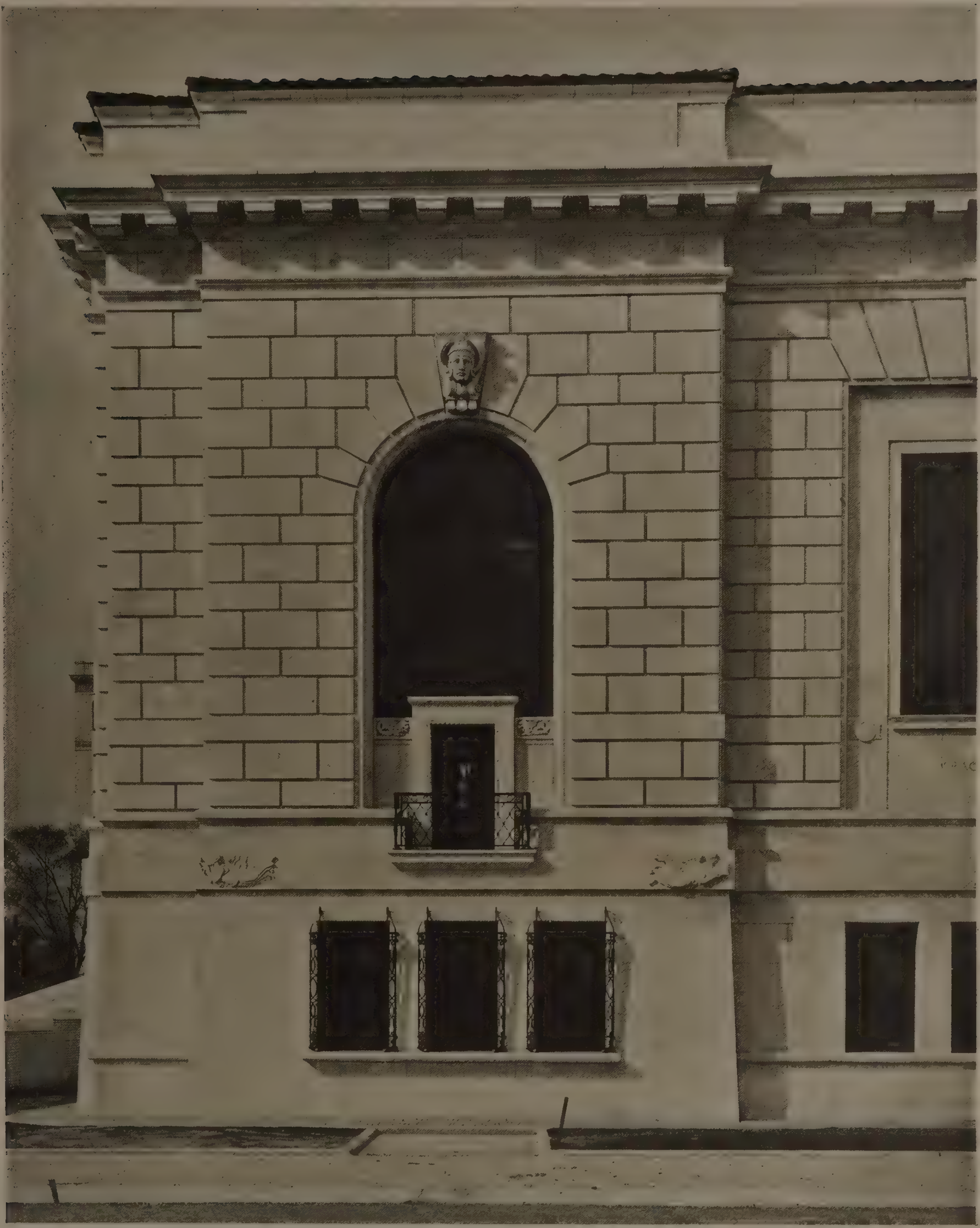
The main floor of the Detroit museum is given over entirely to the choicest specimens of the Institute's collection; all administration and study and other activities are located elsewhere. The visitor finds that he need ask no directions or pass no "Private" doors. The floor is his to roam. The thought is that it is preferable to have on this level a relatively small collection of specimens of increasingly higher quality than to provide for every possible acquisition and spread them out over fatiguing acres of floor space. It is in harmony with the principle which has given the Prado painting gallery at Madrid the highest rat-



A corner of the Early Christian, Byzantine, and Italian Romanesque room, looking into the Northern Gothic hall beyond. Columns, capitals, lower walls, and floor are of stone, but the "stone" arches in the vault are perfect imitations in plaster



Another view of the Northern Gothic hall (page 71 also), illustrating the harmonious setting provided for the sculpture of the period. It is Tudor in the main, with fifteenth-century French trussed hammer-beams, plaster walls with stone trim, and red tile floor



Typical exterior end pavilion, occurring at the four corners of the front part of the building. It goes about its business of being twentieth-century architecture, frankly admitting its Italian Renaissance-lineage, but with no unnecessary gestures. The nicety of the discriminating taste displayed evinces more than hard study ing of any collection in Europe for exhibiting great masters and almost excluding the mediocre. A visitor to its halls will long remember the Velasquez, Murillo, Rembrandt, Van Dyke, and Rubens paintings clearly because he has seen them only and has not had his mind confused by hundreds of insignificant works, whereas in many of the other capital cities, with larger collections, he may later be able to visualize only an occasional canvas. To this same end the Detroit Institute is on its way to simplify the appreciation of art by exhibiting only a discriminating collection. Not only that, but the differentiation of rooms in periods should be a substantial aid in calling to mind certain works of art through association with their environment.

Reference to the plan of the ground floor (page 65; see also Jan. issue) will clearly enumerate its purposes of administration and study and show the disposition of its activities. One of the outstanding rooms of interest to the public is the Northern Romanesque room located under the Northern Gothic Hall, and connected with the Early Christian, Byzantine, and Italian Romanesque Room by a small winding stone staircase in the characteristic European manner. The outdoor court is entered from this room, beneath the Lannoy Chapel. The other important room is a lecture hall seating about 400, executed with only the simplest architectural treatment, but made absolutely charming by the use of simple panel devices and clever color combinations and contrasts. The seats are a jolly red-orange color, quite sufficient with the decoration of walls and ceiling to make the gloomiest auditor forget that the sun is not actually shining in. Since this room is but occasionally used, the ventilating apparatus, which usually serves to keep the storage room on this floor in good spirits, can be so switched in its operation as to serve the lecture hall instead while it is in use.

The remainder of the ground floor is used for administration and other offices, plant, tea-room, study rooms for the various art groups, print rooms, prehistoric art displays, library and textile rooms, check and toilet-rooms.

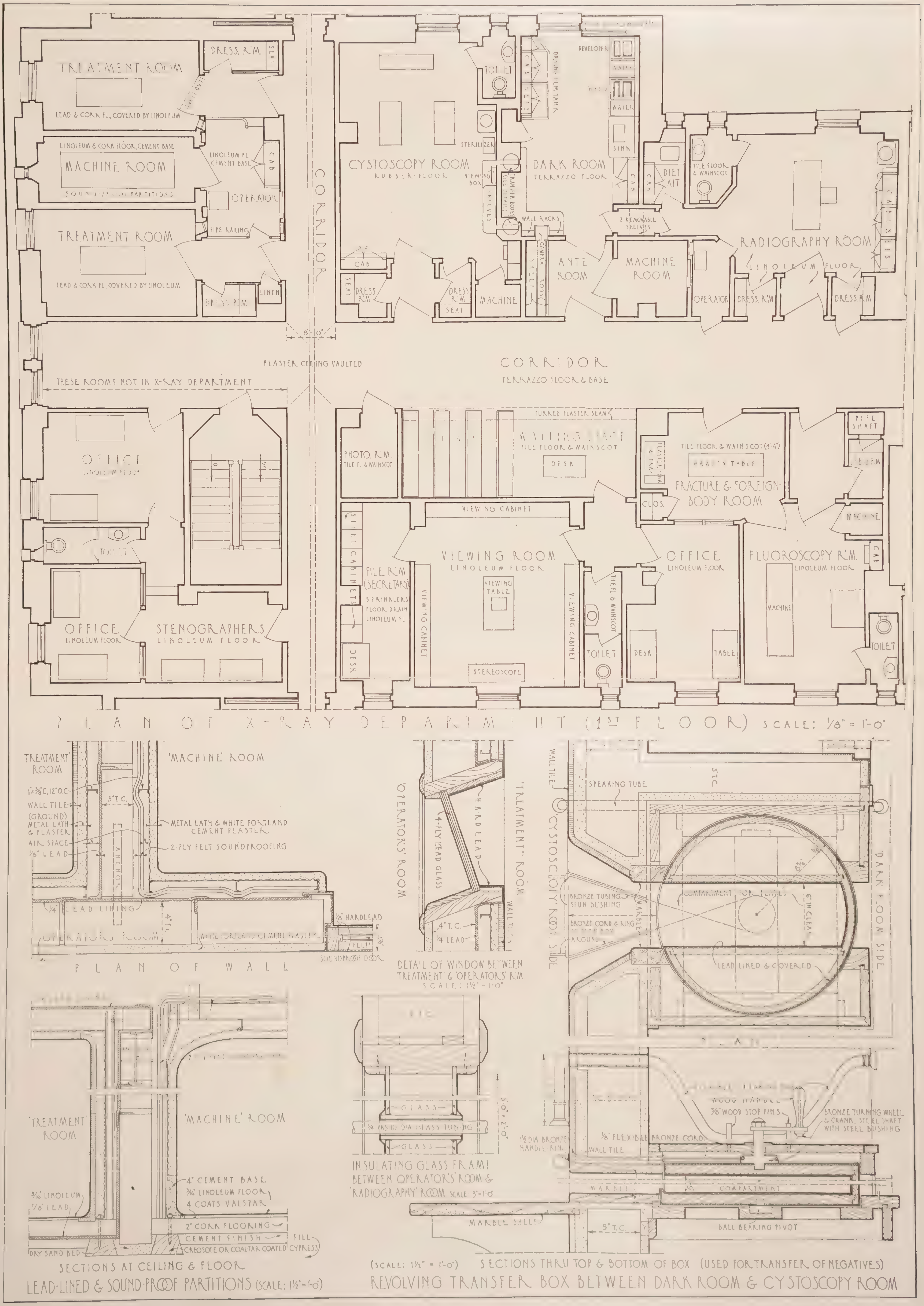
A third floor exists surrounding the garden, used on one side for the staff photographer, retouching department, and studios to be rented temporarily to artists wishing to make copies or do special research from certain of the specimens, while on the other side of the garden are arranged a series of five connecting rooms for the display of "modern" art. These are out of the beaten track of the visitor wishing to view only the progress of art from the prehistoric through the nineteenth century. Since there are apt to be discussions concerning the value of this type of art among the older periods on the main floor, as well as which of the "modern" acquisitions should deserve a place in the permanent collection, these special rooms have been provided apart from the other collections, yet easily reached by stairs from the garden. Some critics may see wisdom in this, others irony, but all must agree on its foresightedness.

In 1919 Mr. Cret began his research on museum problems. By 1920 he had presented his report to the Art Commission and was given the commission as architect, with Zantzinger, Borie & Medary, associated. In 1924 he showed us tens and tens of exterior and interior sketches completed and many more under way. They were all so beautifully studied and drawn that we spontaneously remarked that they ought to be sufficient to build a dozen museums. It was decidedly the wrong thing to have said—it was like showing him a hopeless *esquisse* in our Beaux-Arts days, for he disdainfully retorted: "These? These may serve as preliminary studies and perhaps for a rough estimate, but the building will never be built from them." In the autumn of 1927 we spent a whole day turning through studies done since 1924, drawers and rolls of them! There seemed an endless array of pencil, charcoal, and color drawings—about 2,400, we were told. Working drawings numbered 800 odd. That in a brief statement is a part of Mr. Cret's method—first, detailed research until he knows the terrain and all the hinterland, with every inch of it thoroughly mapped out; after that, all possible alternate schemes, plans, details, elevations, interiors, full-sizes (all studied in color and modelled on the paper as shown in some of the charcoals), until no unthought-of solution remains untried. Seeing such a host of sketches, and knowing that many earlier ones were destroyed, would make any one marvel that so much enthusiasm and thoroughness could go into a building in this supposedly commercialized age! Realizing how some organizations turn out work for the sake of making architecture a "paying business," made the office at the top of the Otis Building, Philadelphia, seem an Olympus far removed from the sordid aims of brokerage-architecture. When we saw the actual building we knew that matters of "cost per drawing" had never been thought of, and that the artist still lives who is nourished not by bread but by ideals. The Detroit Institute is not only a monument to that city, a unique pioneer among museums, a work of art that shall always rank with the best which it may shelter, but a profound, living memorial to the logic, the knowledge, the imagination, the genius of its creator.

As generations learn better to appreciate distinctive architecture and the momentous step forward which this museum has made in presenting art as a pageant and not a mausoleum, perhaps they will consider the inscription above the entrance arches insufficient, and add a line making it to read:

DEDICATED BY THE PEOPLE OF DETROIT
TO THE KNOWLEDGE AND ENJOYMENT OF ART
THROUGH THE GENIUS OF PAUL PHILIPPE CRET

* * *



Plan and Details of X-Ray Department, Roosevelt Hospital, New York City. York & Sawyer, Architects

(See photographs on pages 80, 81, 82)

NOTES

PLAN AND DETAILS OF X-RAY DEPARTMENT, ROOSEVELT HOSPITAL, NEW YORK CITY

YORK & SAWYER, ARCHITECTS

The X-Ray Department of the Roosevelt Hospital, New York City, is illustrated because of the wide recognition given it in this country and abroad. The architects as well as the hospital authorities have had frequent requests for the plan and details here shown. In the opinion of L. M. Franklin, the member of the firm of York & Sawyer who is in charge of hospital work, the solution is the best his firm has arrived at; it was given intensive study in collaboration with Doctor Joseph M. Steiner, specialist in charge of the department at the hospital. Considering the available floor space it is believed that the greatest efficiency was obtained from this particular sequence and size of rooms. After four years of operation the layout has proved satisfactory in all respects except for the small size of the dressing-rooms. Under the circumstances these could not have been made larger, but it is pointed out that if space permits, it is advisable to make some of them large enough to accommodate a cot. Patients sometimes may be compelled to wait some minutes before being X-rayed, while in a condition when they would be happier lying down than sitting up.

According to Doctor Steiner, who has given years to the study of X-ray problems and their administration, the best theoretical solution would consist of a department on the ground floor near the entrance, and one story in height so as to have overhead light. The work focuses around the dark room, which would therefore be in the centre, surrounded by all the other rooms, these in turn surrounded by a corridor. This general corridor would connect with the dark room, being flanked by the waiting-room and office on one side, and the viewing-room on the other. Such an arrangement might not be possible in a given area, but it gives the arrangement best suited to X-ray needs and affords a starting-point from which to develop preliminary schemes.

Dark Room:

This is one of the two most important rooms. It is planned so as to be accessible only through an anteroom, and has a system of automatic controls so that the dark room cannot be entered when developing is in progress. A person wishing to enter the dark room while it is being used, first enters the anteroom, causing a bell to ring in the dark room as a signal that the corridor door is open. When this outer door of the anteroom has closed, the bell stops ringing, signifying that the anteroom is absolutely dark and locked to the corridor so that the door from dark room to anteroom may be opened. A person wishing to leave the dark room while white lights are off can do so only if the anteroom door to the corridor is locked, so that no white light can enter. On a person's leaving the anteroom a bell in the dark room rings, signifying that there is light in the anteroom, and automatically the dark room door is locked.

Other salient features of the dark room are:

The window to the outside has a pocket with a flush sliding panel which can be closed so as to shut out all outside light. This pocket and light-proof jamb should be provided in the wall-furring at the time of construction.

The apparatus for the developing of negatives provides tanks in the following order: developer, running water, "hypo" acid solution, and running water. Opposite is a tank for the drying of negatives.

Between the dark room and the cystoscopy room are revolving transfer boxes for negatives which must be developed with great rapidity while the patient is on the operating-table. These save the time it would otherwise take to leave the cystoscopy room and enter the anteroom before delivering the negatives. They are provided with a compartment which revolves and prevents any light from entering the dark room (refer to detail). Another means of accomplishing this was tried between the dark room and the radiography room by having two shelves in a closet, accessible by doors opening into each of the two rooms (refer to plan). It has not worked out as satisfactorily as the revolving transfer box, however, and has now come to be used simply as a closet.

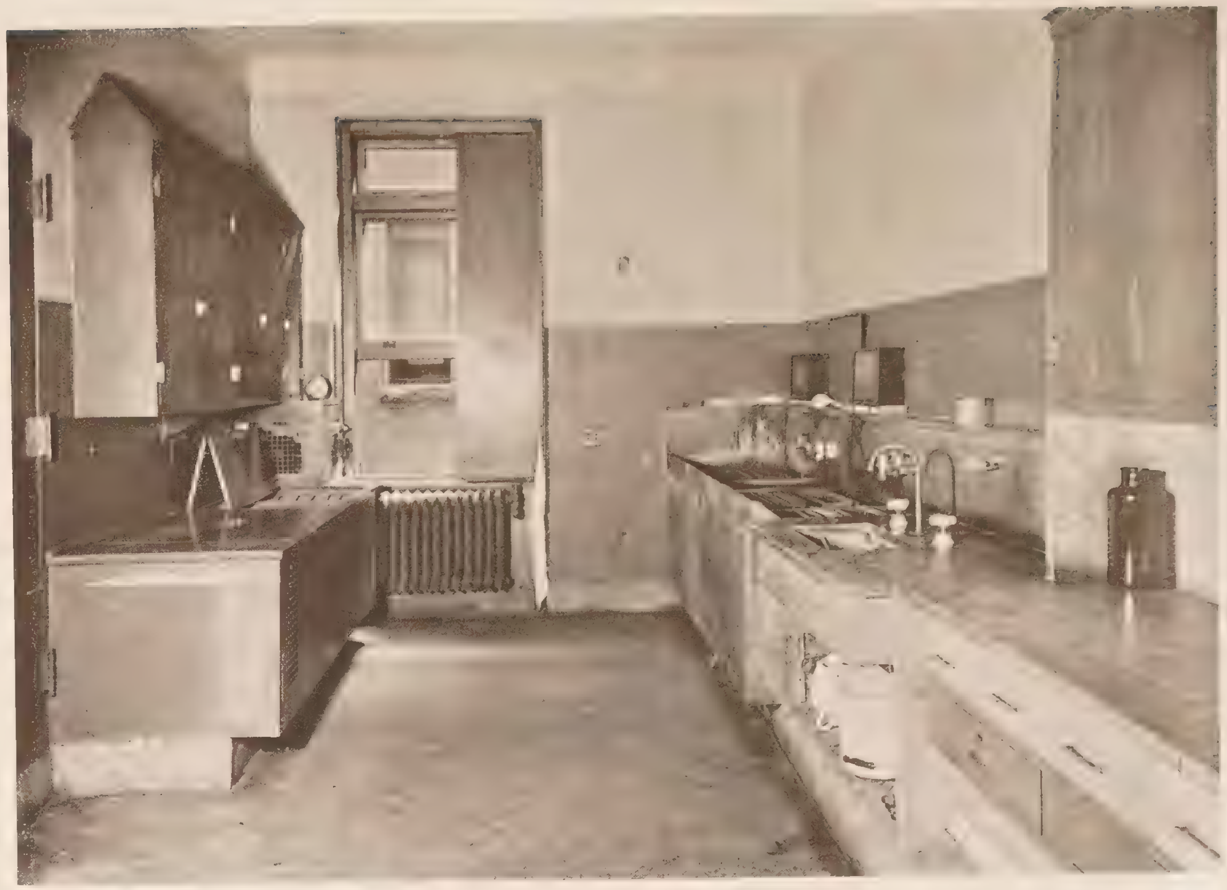
It is Doctor Steiner's opinion that when the size of the dark room has been determined, it is a good factor of safety to increase it by 50 per cent; while more rooms may be added to take care of expansion, the dark room must usually retain its original dimensions even though its work doubles. It is an advantage to have the filing-room close at hand.

"Treatment" or Therapy Room:

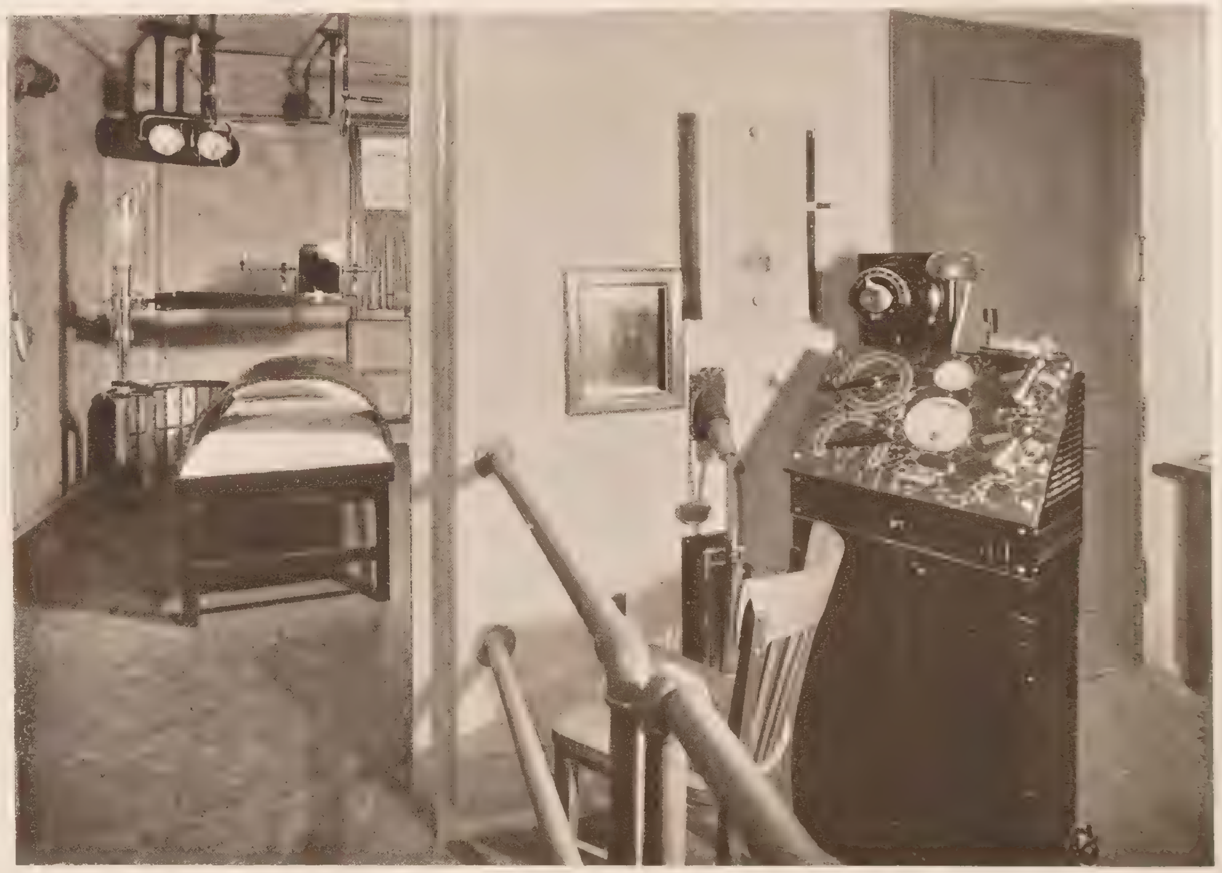
Next to the dark room this is the most important room of the department. Usually there are two of these rooms, on both sides of a "machine" room (see plan). Walls, ceiling, and floors are protected against any leakage of the X-rays as shown in the details. The walls of the machine-room are sound-proofed. The patient is protected from the rays, except where the treatment is being administered, by lead sheets. Since their weight would be uncomfortable, hoops covered with lead take the weight off the patient, and are arched over the cot, as shown in the photograph.

General:

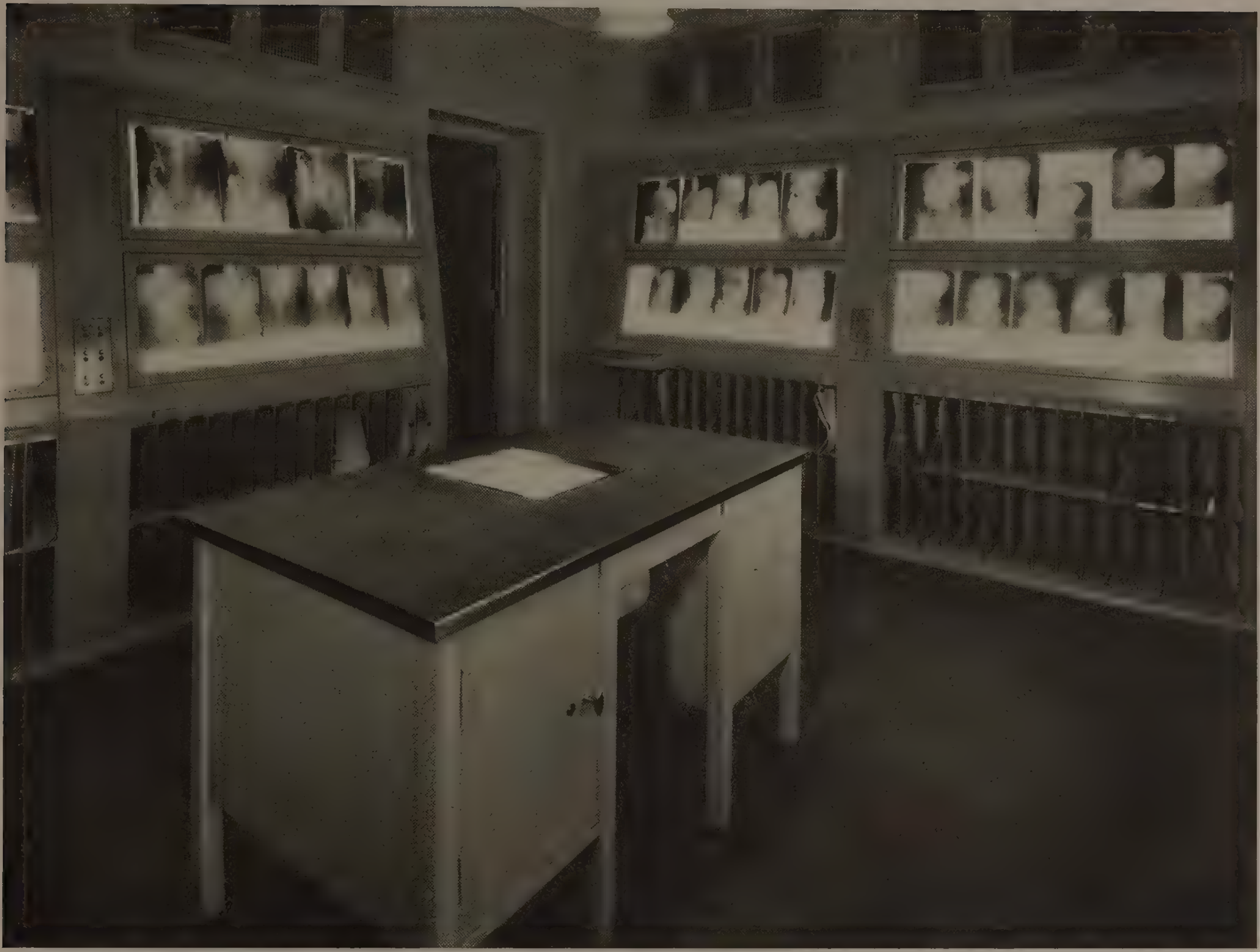
Space allotted X-ray departments is generally too small, so that when the work expands the staff is handicapped by makeshift alterations. This department covers about 2,800 square feet in the Roosevelt. Wherever possible, cabinets have been built in the walls, or failing that, the space above has been furred out so that there may be no dust catchers. All toilet-rooms are provided with tile floors and wainscot. Films are stored on the roof so as to obviate any fire danger. Dressing-rooms are more comfortable, especially in the hot weather, if the partitions do not run to the ceiling.



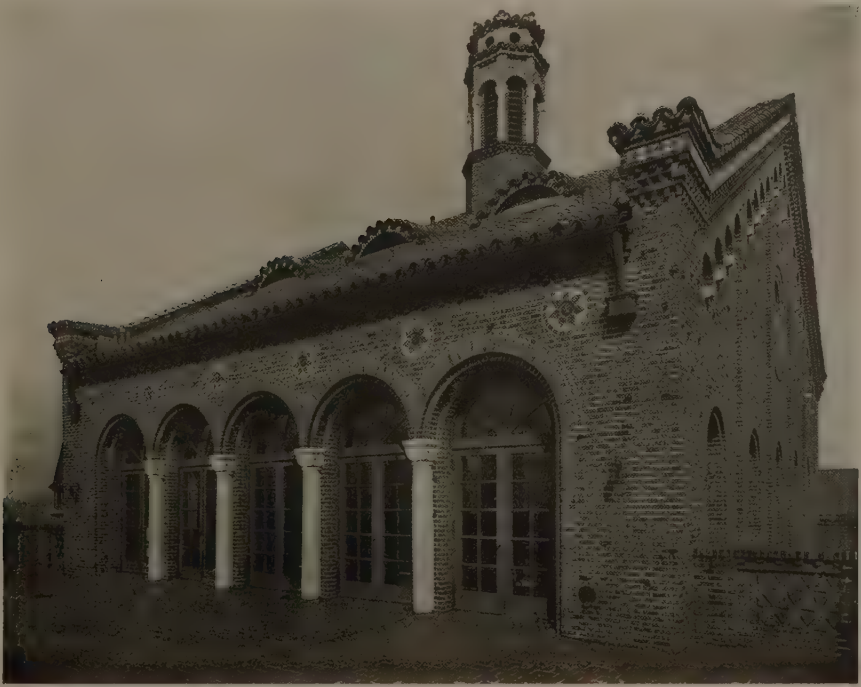
Dark room, showing sliding panel partly in front of window. Drying-cabinet is on left, developing and hypo tanks on right



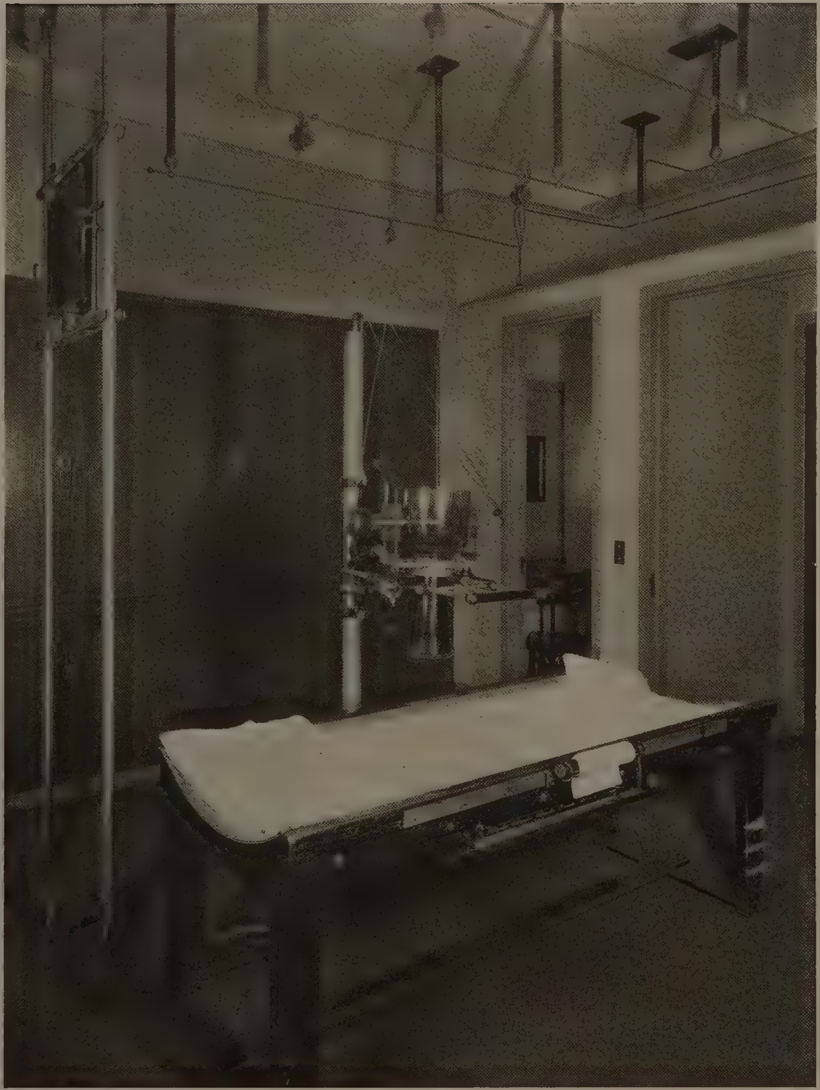
"Treatment" or therapy room, at left, showing the machine over the cot, as well as the suspended lead covering for the patient, arched over the cot. To the right, the operator's controls and the window through which the operator can observe the patient



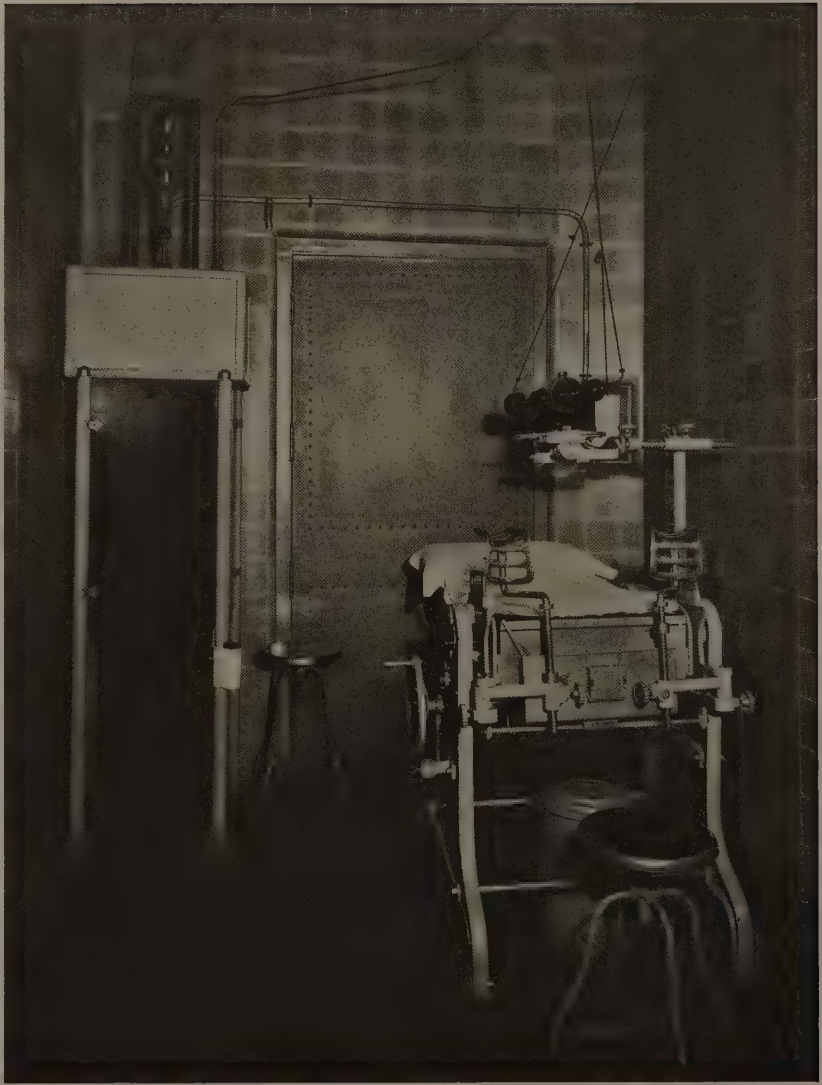
Viewing-room, showing the method of hanging negatives in front of the illuminated cabinets. The table in the centre of the room is provided with a similar lighting device. The cabinet faces are inclined at a slight angle so that the negatives may lie flat against the glass. This also prevents dust from collecting above the cabinets



Although not closely connected with the X-Ray Department, this photograph of the Solarium is included among the Roosevelt Hospita details for its own sake, and as an interesting piece of brickwork and tile scaled for its high location



Radiography room



Cystoscopy room

X-Ray Department, Roosevelt Hospital, New York City. York & Sawyer, Architects

EDITORIAL COMMENT

PROFITS

A BULLETIN of the Michigan Society of Architects calls attention once more to the ages-old fact that the architect is rarely a business man. At the end of a year he has a fairly accurate knowledge as to whether he has made a profit, but as to how much of it came from this job or that one, or which operation cost him more than he received from it, he could not say. There are exceptions, of course, but they merely emphasize the general rule. As the architect's practice grows he will, with little hesitation, add a draftsman now and again to his force. Yet it would require the strongest kind of argument to persuade him that the addition of a good clerk would probably be an even better investment. Cost systems and detailed accounting, excepting in the offices whose large size makes these things absolutely necessary, loom up before the average architect as mere luxuries of the mathematical mind—just more cogs to slow up the machinery.

What this editorial should try to do, doubtless, is to scare, shame, or cajole the architect into making some new resolutions as to systematizing his office practice. It is not going to try. To the accusation, "The architect is rarely a business man," we languidly answer: "Well, what of it?"

After all, the architect exists for the sake of creating beauty—or as nearly that as the appropriation and his hard-boiled client will allow. He isn't conducting a business; the mysteries of net profit as compared to gross turnover, of productive and non-productive activities, of cost per operation, are probably never intended to be anything other than mysteries to him. Why, after all, should he care to waste his precious time over these things—a surgeon wouldn't do it, nor an educator, nor a sculptor. The premise is that the architect knows, at the end of the year, whether or not he has made a profit. Very good. If the profit is non-existent, something will have to be done about it—we do not know just what—but if his books, if any, show a balance on the right side, we congratulate him; he's had a good time, presumably, and it hasn't cost him anything in money.

ETERNAL VIGILANCE

SOME one has said that whereas this country may once have been a "government of the people, by the people, for the people," it seems coming to be a government of the people, by their myriad associations, and for the paid secretaries. And yet, what are we going to do about it? Those who absent themselves and the defense of their causes from the lobby city on the Potomac may "live to fight another day," but they will have to pick a new cause to replace that which will certainly have been lost.

Two causes of which the American Institute of Architects considers itself a champion have recently been attacked, and in both the Institute has immediately struck a vigorous defensive blow.

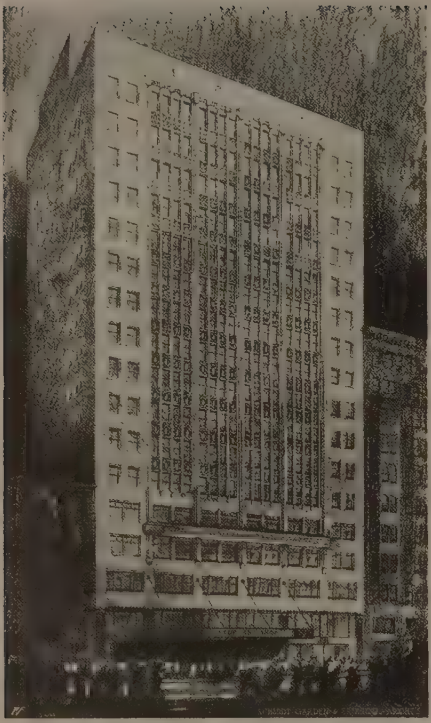
The American Engineering Council advocates the transfer of commissions and bureaus having to do with construction to the Interior Department, under an assistant Secretary who should be an engineer. The Council's appeal for indorsement the Institute emphatically declines. It maintains that the construction work of the Government is of two kinds: that which is related to the fine arts and that which is related to engineering construction, and that each should be represented in a major bureau, if not in a separate Department, by an assistant Secretary whose training is appropriate to the task. The Institute vigorously objects to any change in the disposition of the Commission of Fine Arts by which it would have its complete independence of judgment and action modified. And that's that!

Again, it has been proposed that the Federal Power Commission permit a private power company to erect a power dam, 115 feet high, at Little Falls, in the District of Columbia, and a similar dam at Great Falls, in the State of Maryland, thereby submerging the Potomac Valley between Washington and Great Falls, and obliterating the present falls by diversion of the water. To this suggestion the Institute offered a resolution condemning without reservation the proposed obliteration of the Potomac Valley and the drying up of Great Falls through the erection of hydroelectric power dams on the Potomac River. It would mean the inevitable destruction of a great national park area deemed to be essential for the future development of Washington.

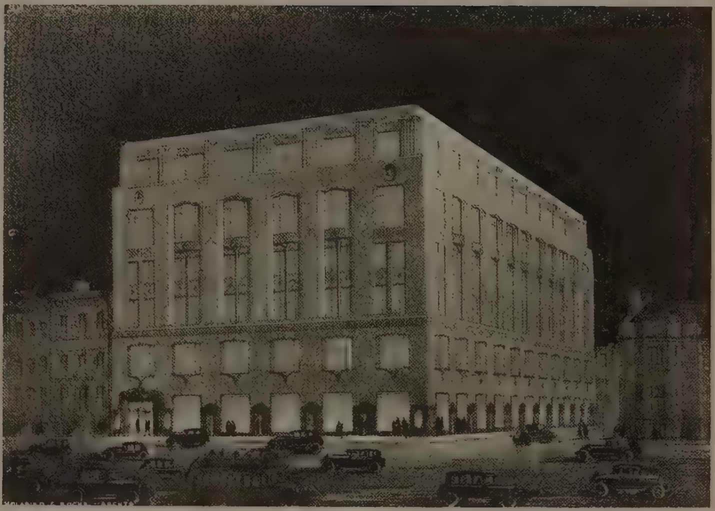
Both of which actions on the part of the Executive Committee, acting for the American Institute of Architects, reassure us that our outposts are capably manned and alert, ready to challenge any incipient attack.

> *Of the 617,676 dwellings built in England and Wales since the War, the vast majority are cottages with gardens. In London we have, indeed, a few blocks of flats; but 84 per cent of the dwellings built by the London County Council are cottages. The remaining 16 per cent are flats, and of these one-third are in buildings not more than two stories high. In ten other large towns I find that less than 3 per cent are flats and the rest are cottages.*
>
> Raymond Unwin,
> *Architectural Adviser of the Ministry of Health of England.*

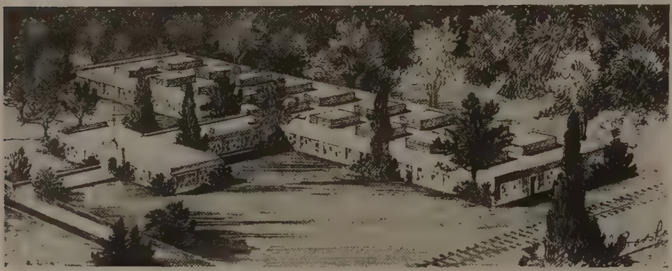
Architectural News



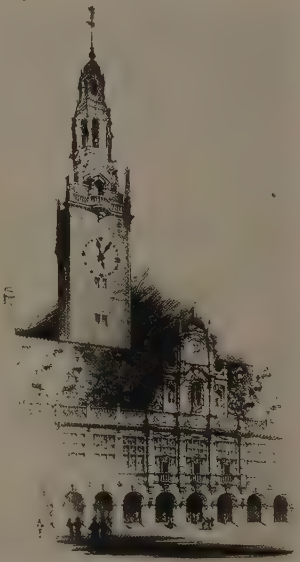
The proposed Stop and Shop Building on West Washington Street, Chicago. Schmidt, Garden & Erikson, Architects



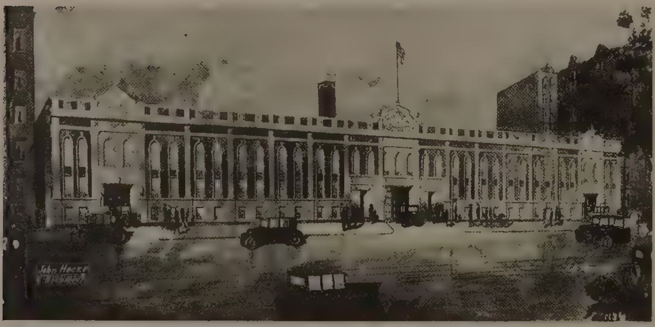
A proposed shop, office, and studio building for the corner of Michigan Avenue and Chestnut Street, Chicago. Holabird & Roche, Architects



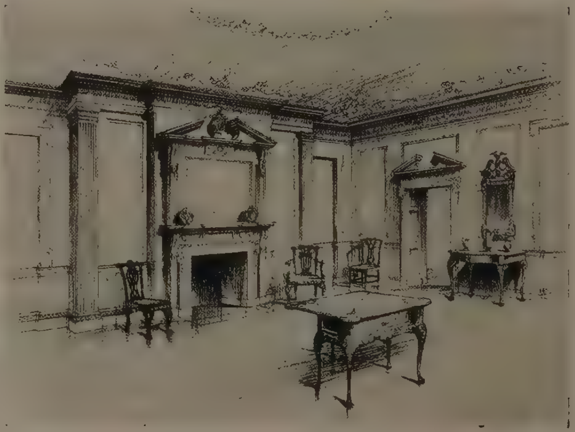
Proposed factory building for the American Metal Products Corporation, St. Louis. Preston J. Bradshaw, Architect



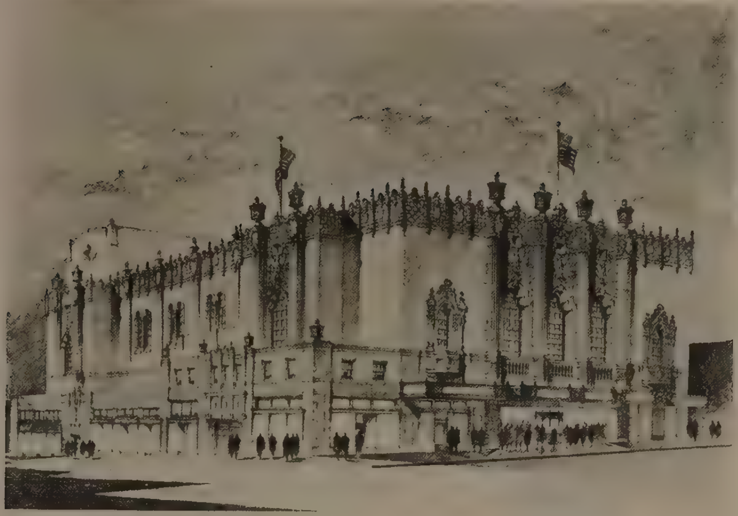
American engineers are raising a fund to equip the Louvain Library tower with a memorial clock and carillon. Warren & Wetmore, Architects



A proposed garage facing Jackson Park, Chicago. John Hocke, Architect

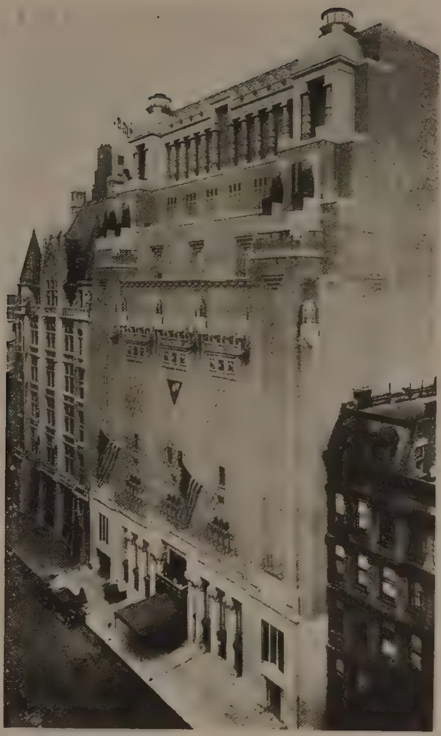


The Philadelphia Museum of Art has received from George D. Widener the great ballroom from the historic Samuel Powel residence (1768), South Third Street, Philadelphia

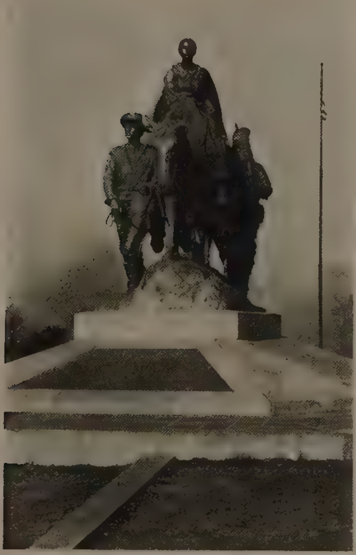


A theatre building now under construction in Seattle, Wash. Sherwood D. Ford, Architect

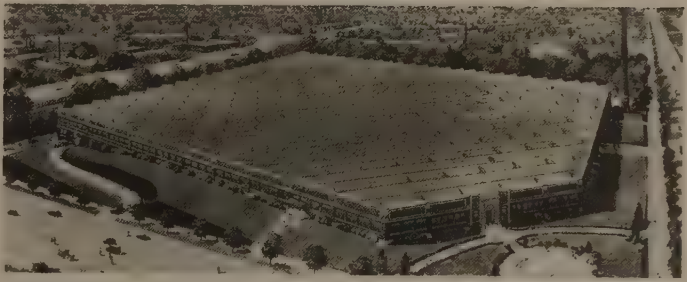
in Photographs



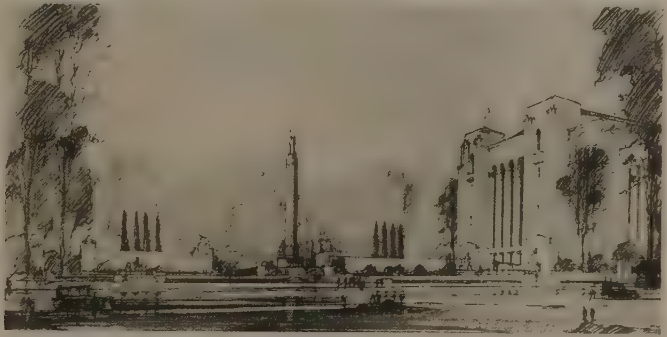
The recently completed Pythian Temple on West 70th Street, New York City. Thomas W. Lamb, Architect



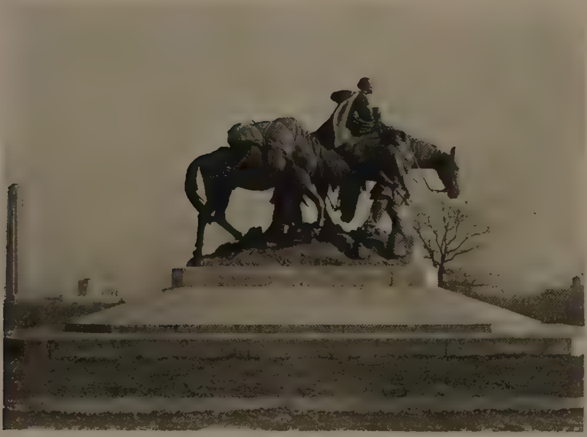
There has recently been set up in Kansas City a statue depicting the Pioneer Mother. A. Phimister Proctor, Sculptor



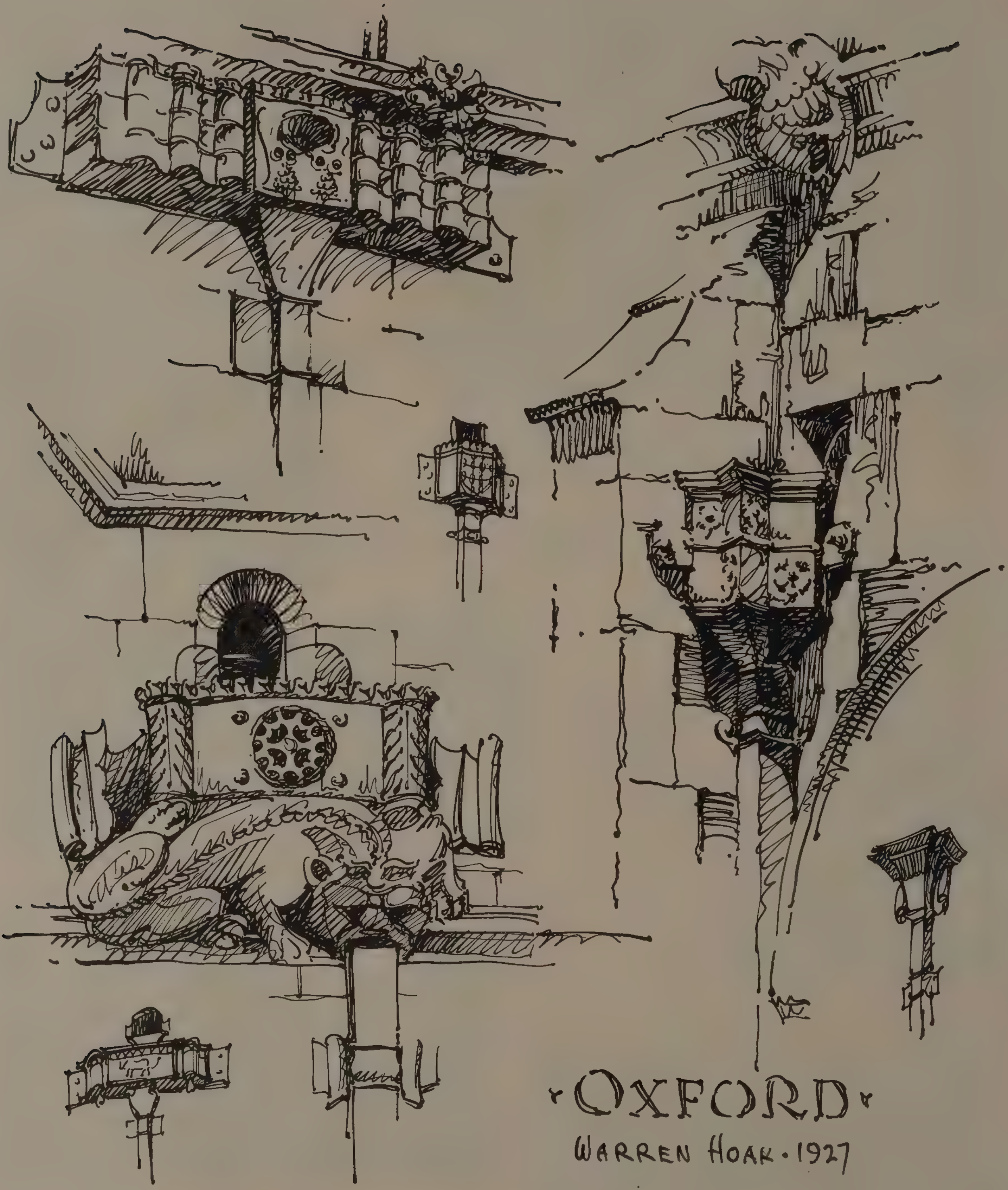
An air view of the Atwater Kent factory, Germantown, Pa., from a drawing copyrighted by The Ballinger Company, Architects and Engineers. This has already been enlarged at the rear corner



The proposed armory and memorial to Chicago's South Side heroes in the late war. It will be occupied by the 124th Field Artillery. Perkins, Chatten & Hammond, Architects



The Pioneer Mother is a gift to the city by Howard Vanderslice. In the background may be seen Mr. Magonigle's Liberty Memorial



LEAD RAIN-CONDUCTOR HEADS

E. Warren Hoak, of California, won the Stewardson Travelling Scholarship for 1926–27, after completing the course in architecture at the University of Pennsylvania

Sound Insulation

A DISCUSSION OF SOME OF THE PRINCIPLES INVOLVED *

By V. L. Chrisler

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IN the past much stress has been laid upon the details of construction of a building relating to strength and its fire resistance, but little attention has been paid to the question of sound insulation between adjoining rooms.

In apartment-houses, hotels, office-buildings, hospitals, and other structures it is essential that they should be fire-proof, but it appears as if the necessary requirements for making them fire-proof also make them very poor from the standpoint of sound insulation. It is a well-known fact that in many of the apartment-houses ordinary conversation in one apartment can be easily overheard in the adjoining apartment. Also many of the plumbing fixtures are noisy and no attempt is made in many cases to prevent this noise being heard in all of the surrounding rooms.

At the present time there is little information available on different types of structures which are fire-proof and are also satisfactory sound insulators. The Bureau of Standards, with the co-operation of a number of manufacturers' associations, has made a large number of tests on various types of standard construction and also a few tests on special types of construction to determine if possible along what lines work should be continued so as to develop a type of construction which is fire-proof and also a satisfactory sound insulator.

Before taking up a discussion of different types of construction it is desirable to consider some of the difficulties of measurement and a proper method of expressing the results. Regarding these difficulties of measurement two things will be mentioned. When a partition is a fairly good sound insulator the intensity of the sound may be one million or more physical units greater on one side than on the other. If a mechanical or electrical method of measurement is used it therefore requires a measuring instrument of considerable flexibility to measure quantities of such different magnitudes. If the ear is used as the measuring instrument, though the apparent range through which measurements have to be made is smaller, the personal equation comes in with its added uncertainties. After choosing a method not all the difficulties are settled. It is necessary to build a panel so large that its size approaches that of a small partition-wall, as the whole wall is set in vibration when a sound is produced. An area of three or four square feet would not vibrate in the same manner as a wall having ten or twenty times this area. Also this partition must be placed or built in an opening between two rooms to test its sound transmission. The nature of these rooms, especially the one on the opposite side of the panel from the source of sound, affects the results as measured in the laboratory. It also makes considerable difference whether the measurements in this room are taken close to the panel, or whether the average intensity in the room is taken as a measurement of the amount of sound that is transmitted. Unfortunately, different observers, up to the present time, have not settled upon any standard conditions for making transmission measurements, so that although they may express their results in the same manner these results are not numerically the same, due to the different conditions under which the measurements were made. In each case observers would probably arrange the panels in the same relative order of merit as to opacity to sound, but the comparison could not be carried much farther.

These facts must be borne in mind, as it is desirable, in referring to the work of different observers, that no misunderstanding shall arise. No attempts will, therefore, be made to make a direct comparison of the numerical results.

TWO SCALES FOR MEASURING INTENSITY

SINCE sound insulation is concerned with the sensation received by the ear, the sound transmission should be expressed as nearly as possible in the same manner as it is heard by the ear. It is a well-recognized fact that the response of the ear is not proportional to the energy of the sound wave. We therefore have two scales of intensity: that of the physical scale, such as the telephone measures, and that of the ear scale. These scales are connected by the following empirical relationship: The intensity of the sensation of loudness on the ear scale is proportional to the logarithm of the intensity on the physical scale.

A barely perceptible sound is naturally regarded by the ear as of very low intensity, nearly zero; but because still feebler sounds exist the physicist calls the sound at the limit of audibility unity, while on the ear scale its value would be zero, which is the common logarithm of unity. Sounds having the intensity of ordinary speech are rated as having an intensity of one million to one hundred million units on the physical scale, while on the ear scale this loudness would be rated as 6 to 8, as these are the common logarithms of the above numbers.

WHAT CONSTITUTES GOOD SOUND INSULATION

FROM the above it will be seen that it is desirable to have a partition or floor which will at least reduce a sound having an intensity of 6 on the ear scale to zero or, in other words, have a reduction factor of at least 6 on the ear scale or one million units on the physical scale. It is also desirable at this point to call attention to what would be considered a real improvement in the sound insulation of a partition. Suppose we consider a partition which has a reduction factor of 4 on the ear scale or 10,000 on the physical scale. Now suppose some material is used which improves the partition so that only 25 per cent as much sound passes through as before or, in other words, as it is frequently expressed in advertising, the panel is four times as good as before. These figures are, of course, given on the physical scale so that the reduction factor becomes 40,000, but on the ear scale it changes only from 4.00 to 4.60, which are the logarithms of 10,000 and 40,000 respectively. This, of course, represents some improvement, but not nearly as much as would appear when the statement is made that only 25 per cent as much sound passes through as before the additional material was added. In fact, if two such walls were built and a fairly loud noise produced and heard through the partitions the ear would indicate one partition to be better than the other, but not enough better to justify much additional expense in construction. If, however, the partition with the added material transmits only 1 per cent as much sound as before, again expressing it in advertising terms, the partition is one hundred times as good as before. On the ear scale the improvement in this case becomes quite marked, as the reduction factor changes from 4 to 6.

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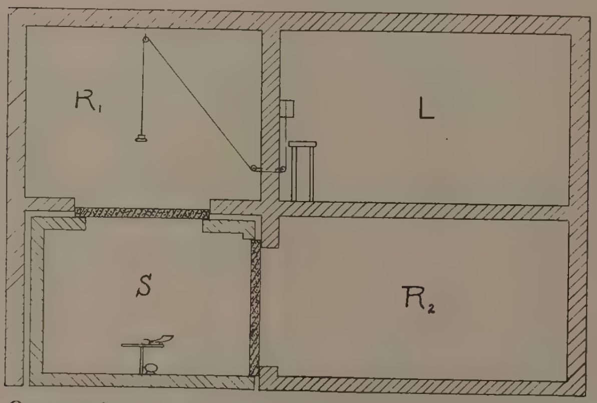
* Publication approved by the Director of the National Bureau of Standards of the U. S. Department of Commerce.

Judging from the results which have been obtained at the Bureau of Standards and also from the published results of Paul Sabine at the Riverbank Laboratories, it would appear that in fire-proof structures in which the partition walls are masonry and the plaster is applied directly to the masonry, the predominating factor in obtaining a wall which is a good sound insulator is mass. The strength of the wall and the kind of plaster used affect the amount of sound transmitted to a minor degree, but not enough to be of much practical importance. This means that the builder is not restricted to the use of any particular material, but can use brick, hollow clay tile, gypsum tile, a solid plaster partition, or anything else of this nature and get approximately the same results acoustically as long as he keeps the total weight of the wall the same. None of the walls of this type become very good sound insulators, however, until they are excessively heavy, as the degree of sound insulation on the ear scale does not increase nearly as rapidly as the weight.



Cross-section of the Bureau of Standards sound chamber. S, transmitting room; R₁, R₂, the receiving rooms

For modern construction, where it is desirable to keep the weight of the partition walls as small as possible, it is necessary to go into special types of construction to secure a satisfactory degree of sound insulation.

HOW SOUND IS TRANSMITTED THROUGH A WALL

To form a clear idea of the properties of a wall which are necessary in order that it shall be a good sound insulator, we must consider how the air vibrations which constitute sound waves are transmitted through a wall or floor from one room to another.

Sound waves in air consist of alternate compressions and rarefactions, and if there are no holes or cracks in the wall to provide an air path along which the waves can pass directly from one side to the other, the only mode of transmission is by setting the wall itself in vibration. The wall yields to the pressure of each sound wave that strikes it (though very slightly), so that it is thrown into a corresponding state of vibration; and the vibrating wall, in turn, sets the air on the other side in motion, just as the diaphragm of a telephone receiver or of a loud-speaker sets up sound waves which are propagated through the air to the ear.

A solid wall or a smaller panel, such as a wooden door, thus acts like a more or less elastic diaphragm held at the edges; and it is obvious that the less the wall moves back and forth in response to the sound waves falling on one side of it the fainter will be the sound set up on the other side. Hence, making the wall stiffer or heavier, or both, makes it a better sound insulator.

It is also desirable to call attention at this point to the fact that only a very small amount of the sound energy is transferred from the air to the solid material of the wall. In the case of a hard plaster surface about 98 per cent of the energy is reflected; of the remaining 2 per cent a large proportion is absorbed, and in most cases probably not more than about one-tenth of one per cent is transferred to the air on the opposite side. This being true, the thought immediately suggests itself, why not build a partition which consists of layers separated by air spaces?

Let us consider two walls, one of two layers and the other of three layers. If a single layer allows only 1/1000 of the sound incident on it to pass through, then the two-layer wall might be expected to transmit 1/1000 of 1/1000 or 1/1,000,000 of the original energy and the three-layer wall 1/1000 of 1/1,000,000 or 1/1,000,000,000. On the ear scale this would mean a reduction factor of 6 for two layers and 9 for three layers. On this basis, a two-layer wall would be the approximate equivalent of an eight-inch brick wall and three layers would be better.

In the above calculations one factor was omitted, however, namely, that these layers have to have a common support and that under practical conditions as much or more of the sound energy often travels around through the common support as through the air spaces between the layers. This being the case, such a wall is not found to be as good as might be expected from the above reasoning, but still it is considerably superior to a solid wall.

HOW WALLS CAN BE MADE BETTER SOUND INSULATORS

ATTEMPTS have been made to improve such walls in two ways: One by putting sound-absorbing material in the air space between the layers and the other by breaking the direct connection between the layers and their common support by using some kind of a pad.

When absorbing material is placed in the air space between the layers it has a double effect. If the material is tightly joined together it, of course, acts as an additional layer in the wall and part of the sound is prevented from passing through. The reduction factor of many of the materials used in this manner is small, so that the effect on the total transmission is relatively small.

The other effect is that of absorption. After the sound energy has passed through the first layer of the wall the second layer tends to prevent it from passing on. As a result, the energy builds up in this air space to a much higher value than it would have if it were free to spread in all directions. If absorbing material is introduced into this space a portion of this energy is dissipated and there is less to be transmitted through the second layer of the wall. The absorption of materials which are available for this purpose varies from 10 to 60 per cent or, in other words, 90 to 40 per cent remains after a single reflection, while in the case of the plaster layer discussed about only one-tenth of one per cent passed through. It would appear, then, that the effect due to absorption should be expected to be very small. Measurements made by Paul Sabine* and also by the Bureau of Standards † show this reasoning to be correct, for the transmission of a double wall was found to be practically the same when the space was filled with hair felt as when unfilled.

In the practical construction of a masonry wall with an air space it is a matter of some difficulty to prevent mortar falling into this space. When this happens the mortar may act as a tie between the two wall surfaces, by means of which sound vibrations may be transmitted from one part of the wall to the other more readily than through the air. As an expedient for avoiding this it may be necessary to place in the air space a layer of some material which in itself is no improvement over the air layer, but which by occupying the space prevents the formation of mortar ties, and thus preserves the advantage of the double wall.

Front view of the sound chamber building of which a cross-section is shown on the preceding page

The second method of improving a wall constructed of layers, by breaking the contact between the layers of the wall and their common support, has given the most promising results. There are various methods of doing this. One method, applicable to the case of a double masonry wall, is to carry one layer of the wall on pads, and also to use pads at the ends and top, if necessary, so as to break all connections between this and the rest of the building. To isolate a room completely, this treatment must also be extended to the floor and ceiling.

Another method, applicable to the case of a single masonry wall, is to furr out the plaster on both sides. One system which is now on the market advocates lining the wall with hair felt and then attaching special holders for a small channel iron to which are attached the metal lath and plaster. This particular method has not been tested at the Bureau of Standards. Very good results have been obtained by attaching wooden strips directly to the masonry and then applying tar paper, metal lath, and plaster. The function of the tar paper is simply to keep the plaster which squeezes through the metal lath from forming a bond with the masonry. In this case there are three layers to the wall and the bond between the layers seems to be loose enough to give very good results. It was thought that felt pads between the furring strips and masonry would improve the wall, but in the single case tried no improvement was found. In one test a fibre wallboard was used in place of the metal lath as a plaster base, with equally good results. This work is not completed as yet, but the results to date show that a wall of this type can be built, weighing only 32 pounds per square foot of wall surface, which is better acoustically than a solid masonry wall which weighs 100 pounds per square foot of wall surface. If Sabine's results are accepted, that the logarithm of the reduction factor is proportional to the logarithm of the weight per square foot of wall surface, then the tests show that these walls in which the plaster was furred are as good acoustically as a wall which weighs approximately 200 pounds per square foot.

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* *The Armour Engineer*, May, 1926.

† Scientific Paper of the Bureau of Standards, No. 552.

Thus far tests have been made on only three panels. It is being planned to make additional tests using different types of masonry as a base and different wall-boards as a plaster base. It is probable that the results will depend to some extent on the materials used, but the present indications are that they will depend to a still larger extent on the manner in which the wall is constructed.

As in the above discussion floors and ceilings have been but briefly mentioned, it is desirable to call attention to the fact that the best solution in their case is probably about the same as for partition walls. There is one difference, however, and that is that in the case of partition walls practically all of the objectionable waves are air borne, while in the case of floors the noises are frequently created by a solid object in contact with the floor. This type of noise is much harder to deal with. In the case of a solid masonry floor a noise of this type can be heard in the room below almost as distinctly as in the room in which the noise is produced. If the floor and ceiling are in layers, that is, if a suspended ceiling can be used and pads placed between the masonry and floor, then the sound does not have a good path from the floor in one room to the ceiling of the room below. Only a preliminary study has been made of this phase of the subject at the Bureau of Standards, but it is hoped to make a more complete study of it in the future.

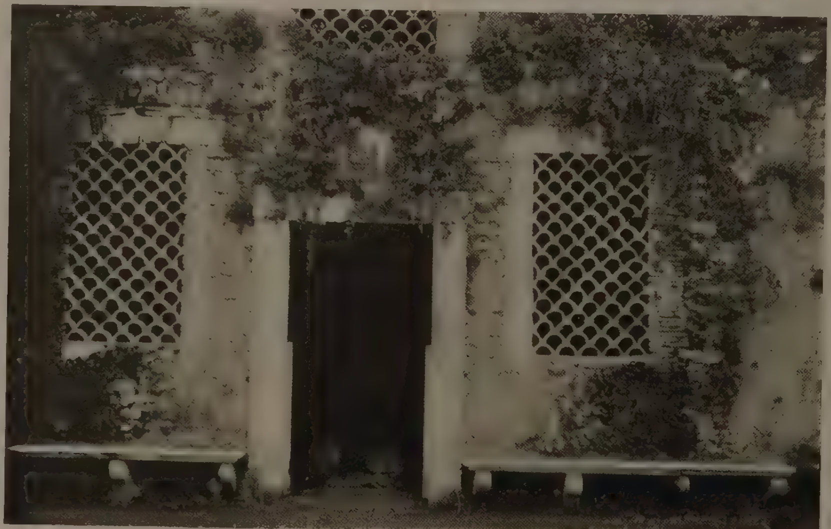
SPECIAL SERVICES IN WOOD-STUD CONSTRUCTION

THE discussion up to the present point has largely been concerned with fire-proof construction in which masonry was the core of the wall or floor. Wood construction is also often used, and a few comments might be added on that type of construction. The principles already discussed still hold. It is evident that the best results should be expected where the wall or floor is built in layers. The wall, for instance, can be built with the studs staggered so that the opposite surfaces of the wall are not fastened to the same studs. Also, if the studs can be carried on pads so that there is not too rigid a connection between them, an improvement may be expected. If nails are driven through the studs into the supporting beam below them the effect of the pad will be partly or possibly completely nullified, as the nails then furnish a rigid connection. When the studs are staggered, various materials are sometimes placed between the studs. The previous discussion again applies and little improvement may be expected unless the material is applied in such a manner that it forms a complete additional layer and that this layer has an appreciable reduction factor compared with the rest of the wall.

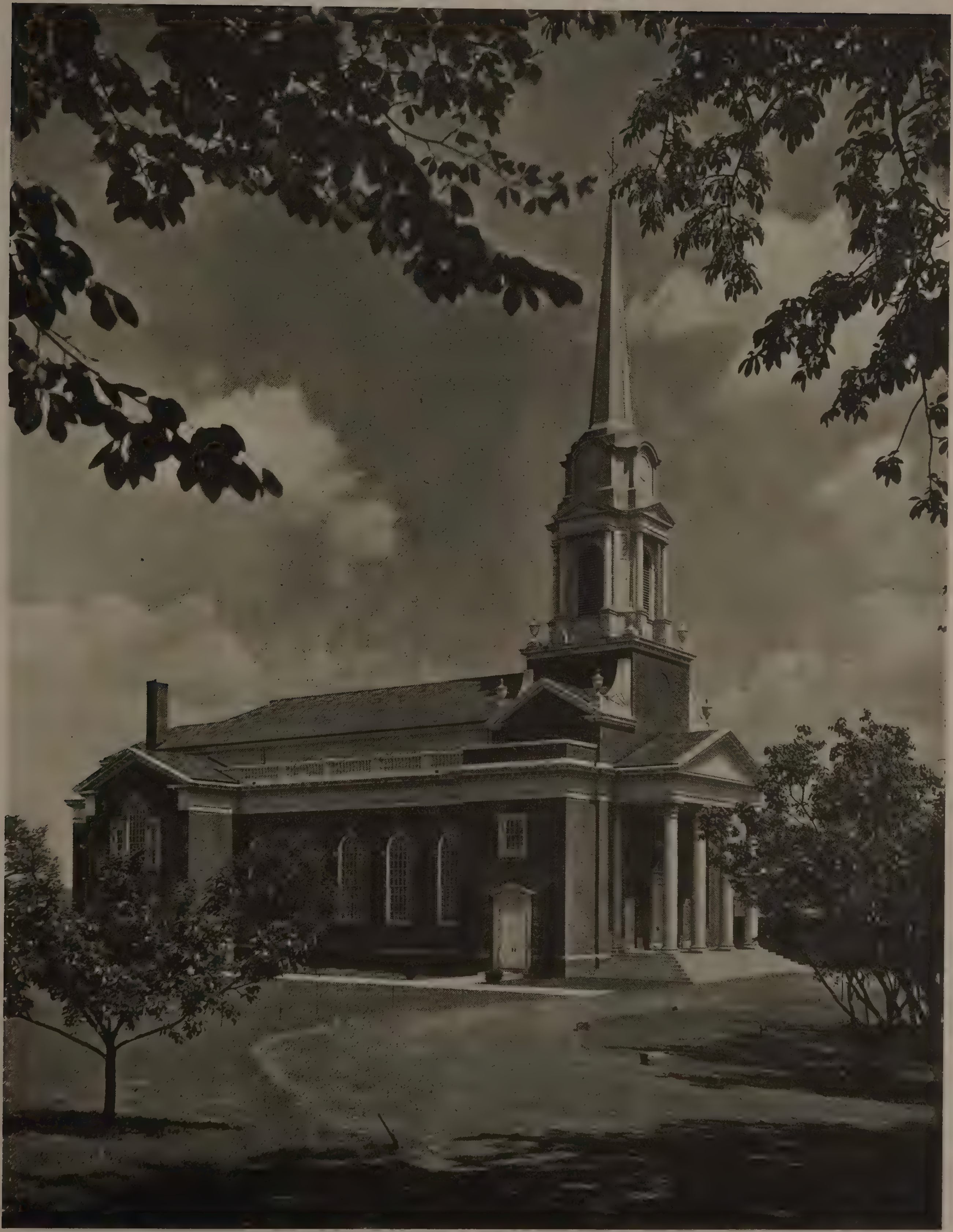
The floor and ceiling must be treated in the same way as previously discussed. A suspended ceiling can be built and the floor carried on pads. In this case there is a tendency for the carpenter to nail the flooring through the padding material to the joist below. The nails again destroy the effect of the pads and little improvement may be expected.

There is one further point which it is desirable to mention, that conduits for water and gas pipes, electric wires, and ventilating flues may act almost like speaking-tubes and transmit sounds directly from one room to another. Their installation requires eternal vigilance, as all of the work done in trying to obtain good sound insulation between rooms may be nullified if such ducts are not properly installed.

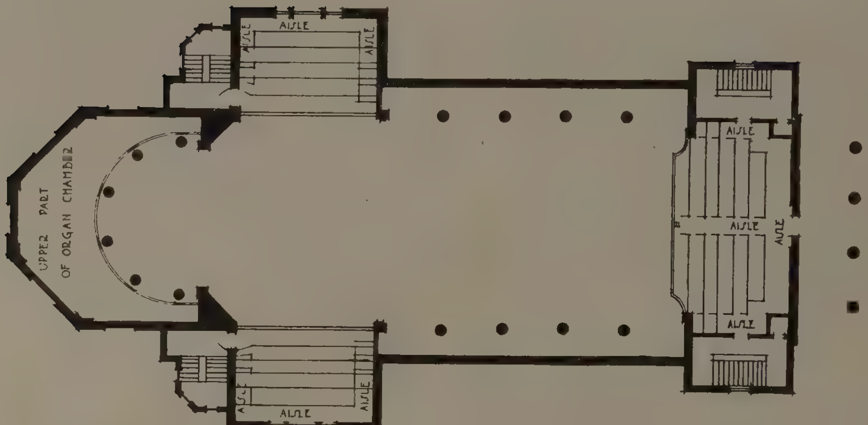
The foregoing is not an attempt to give detailed specifications for sound-proofing but simply a discussion of some of the principles involved and references to some of the tests that have been made. The successful application of these principles will depend upon the patience and ingenuity of the builder.



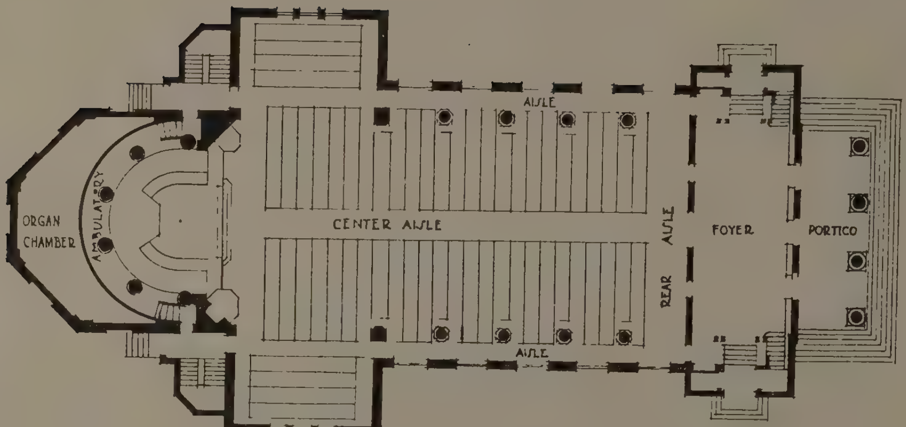
Mr. A. R. Eastman, now with York & Sawyer, brought back from abroad among numerous interesting photographs this one of a screen wall in the gardens of the Villa d'Este. In a rough travertine wall, weathered to a fine golden tone, the brick-framed openings are filled with red terra-cotta roof tiles. The depth of the tile prevents any great freedom of view through the opening



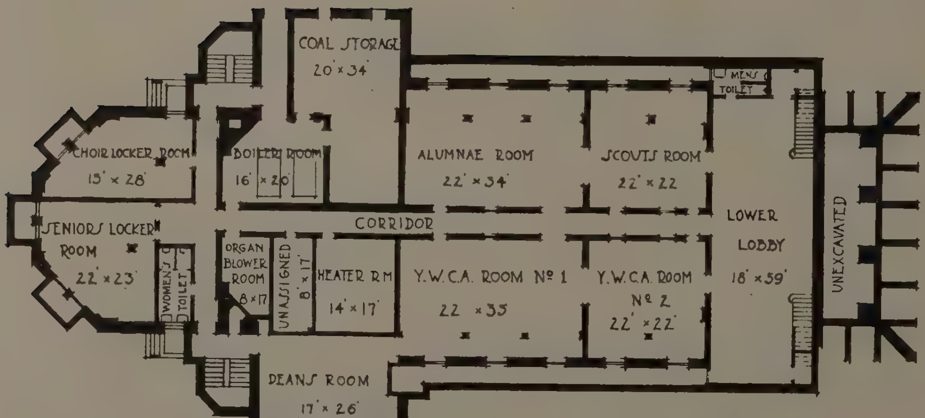
Chapel, New Jersey College for Women, New Brunswick, N. J. Ludlow & Peabody, Architects



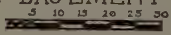
BALCONY PLAN



FIRST FLOOR PLAN



PLAN OF BASEMENT FLOOR



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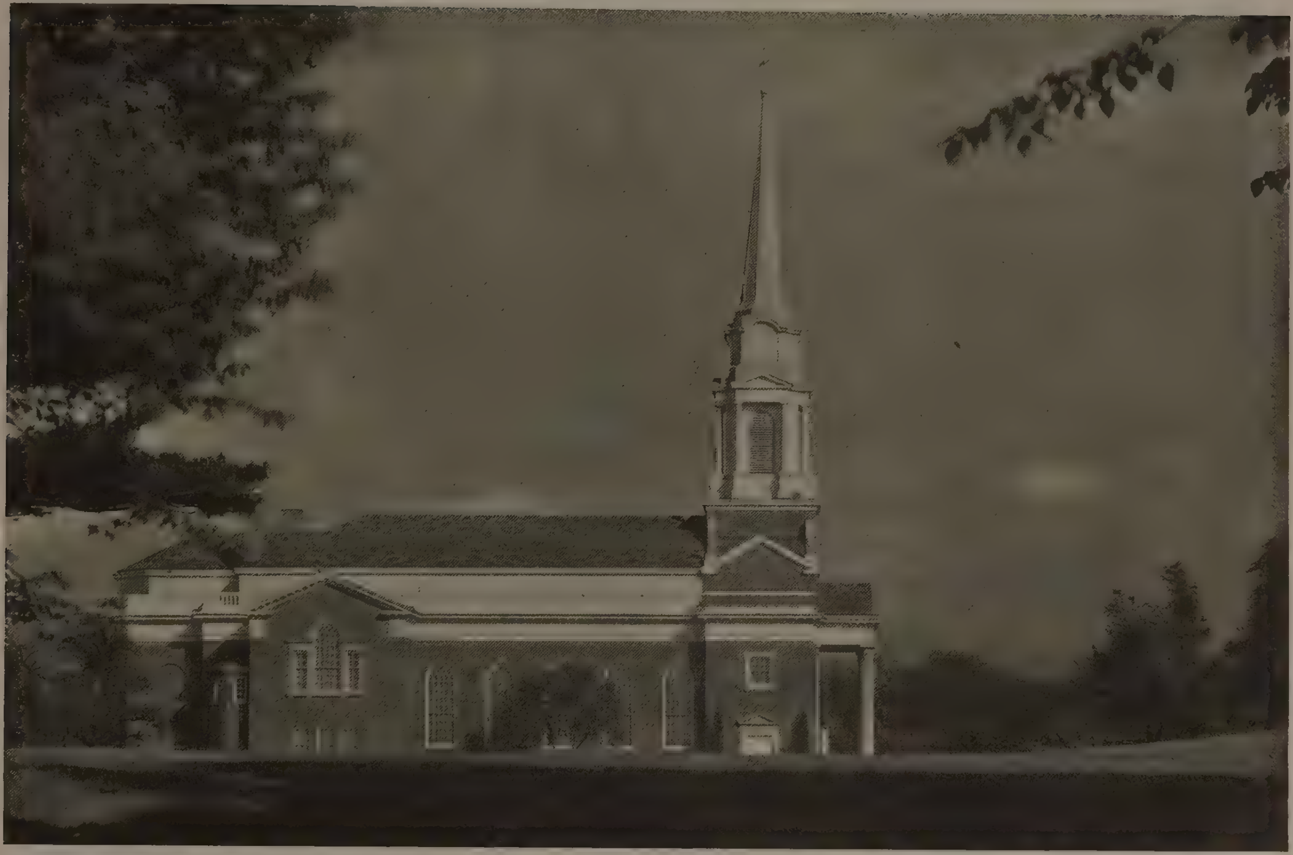

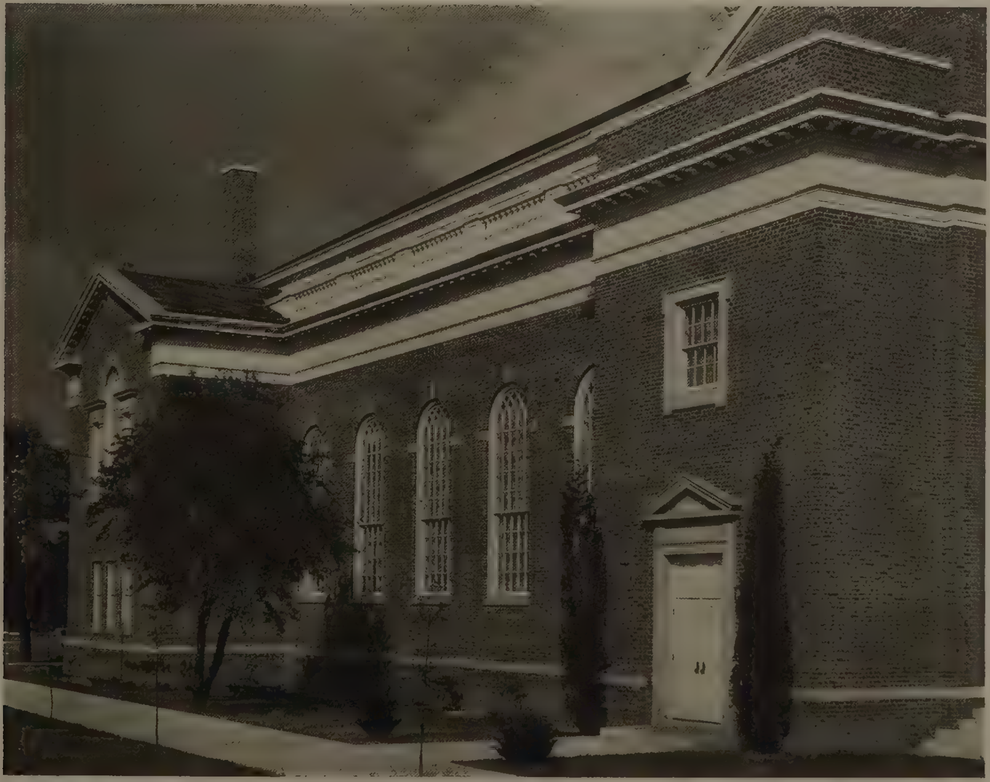

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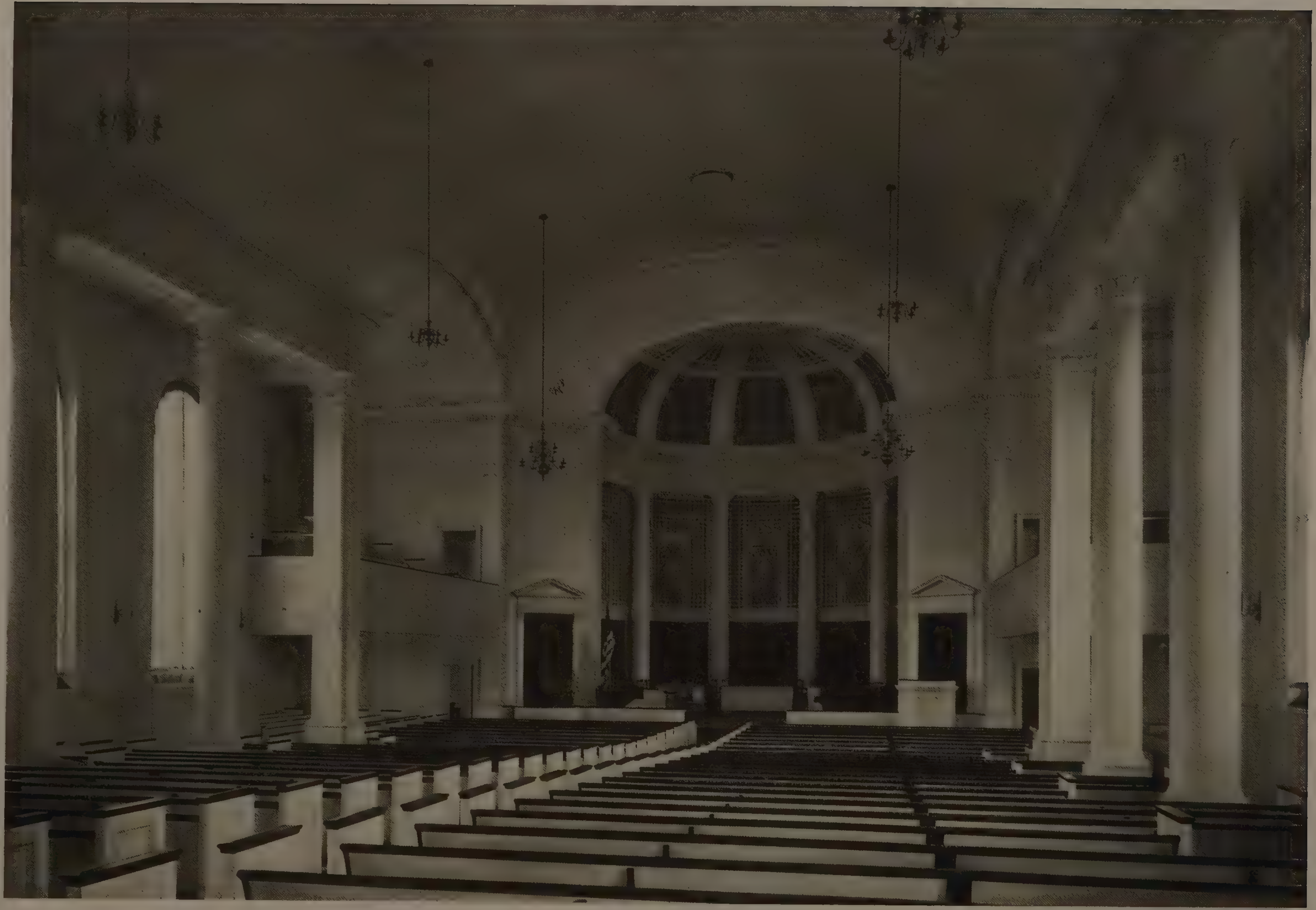

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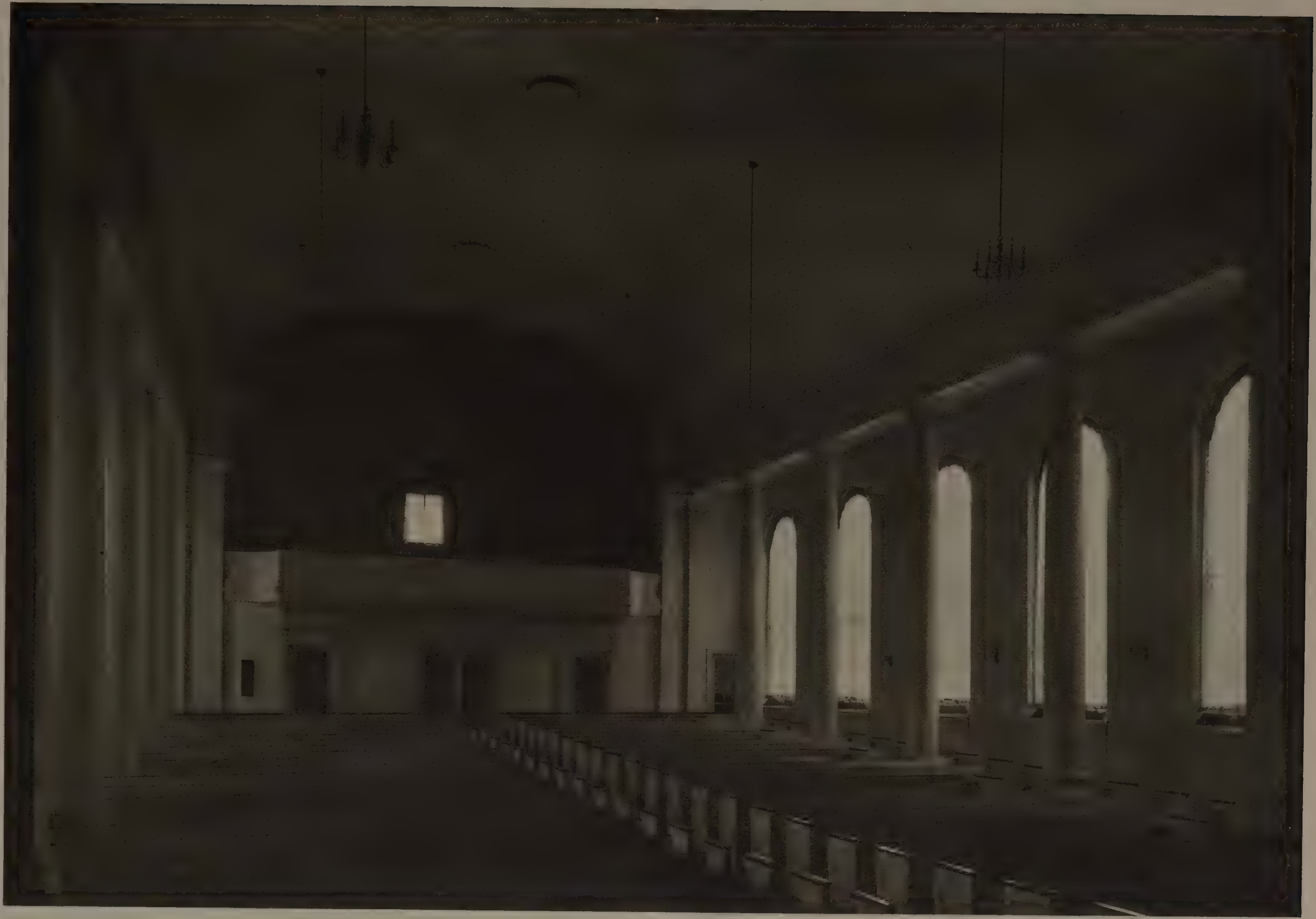

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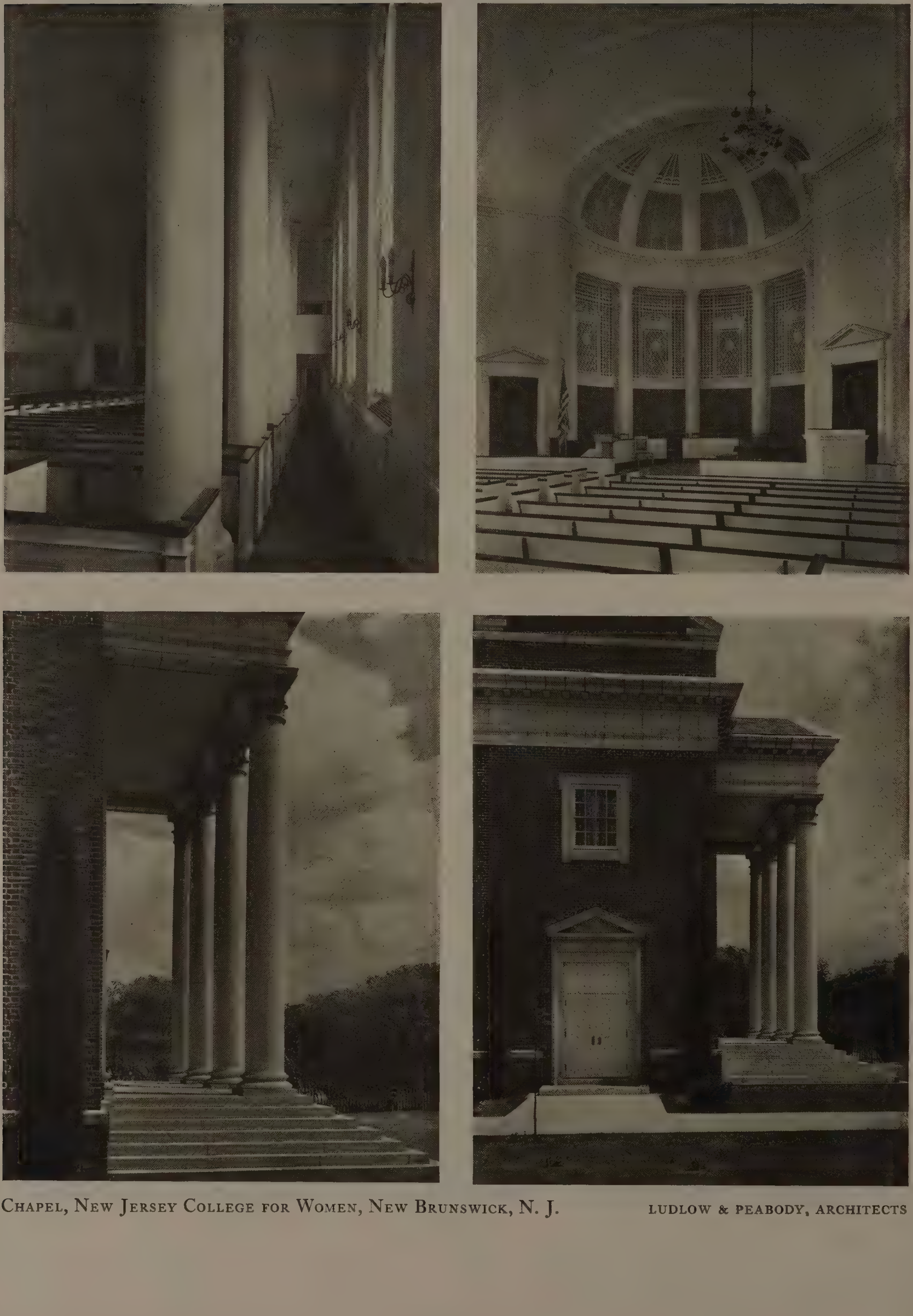

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Fanlights and Flagstones

By William P. Spratling

WITH ILLLUSTRATIONS
FROM SKETCHES BY THE AUTHOR

POKING among the quaint shops and alleyways of old New Orleans, one glimpses only occasional bits of courtyards. Few, however, realize what numbers there are of these tag-ends of a past era, and few know the joy to be had in discovering and exploring their hidden charms. There is hardly a house in the Old Quarter that has not, somewhere back of it, an open space of some sort deserving of the term "courtyard" or "patio."

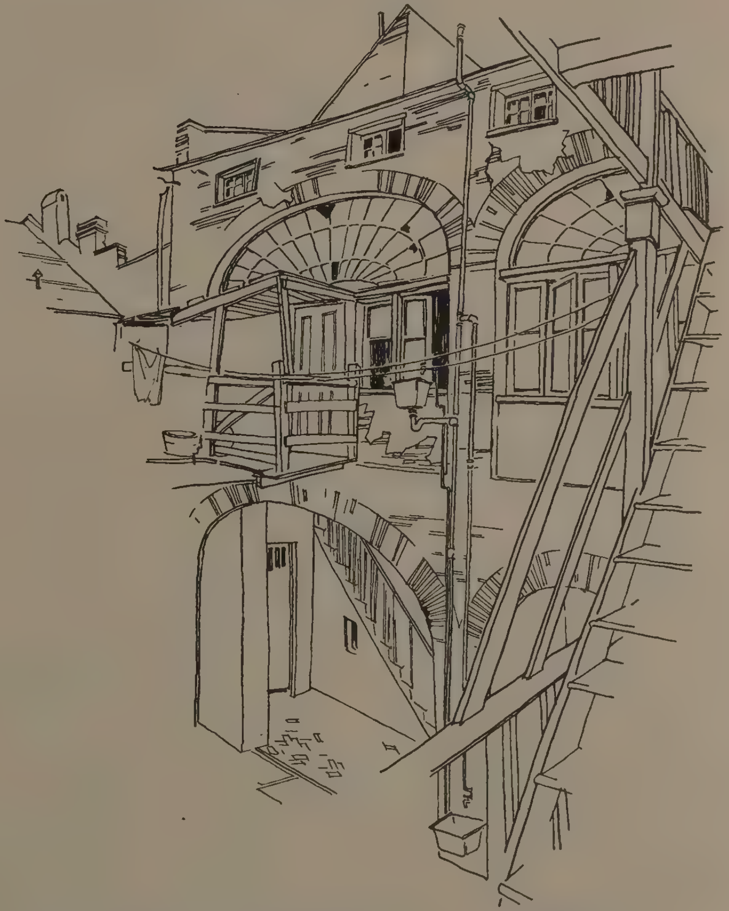
New Orleans:
The Grime House
from the garden

The larger ones are grand and impressive, with fountains and palms and oleanders, and, above, the walls with broad fanlights in tiers. Always the fanlights and always the charm of old walls ragged with patches of plaster and time-scarred brick. From even the smallest of the courts one can almost always discover on looking upward at the rear of the house the fascinating elliptical or circular-headed fanlights of the back gallery. Sometimes they are single, but more often are found in twos and threes, and of various sizes. Frequently in large houses of the two-story-and-garret type one discovers with delight whole back walls practically eliminated and filled with a single pair of tremendously broad fanlights spreading out above like enormous dragon-fly wings.

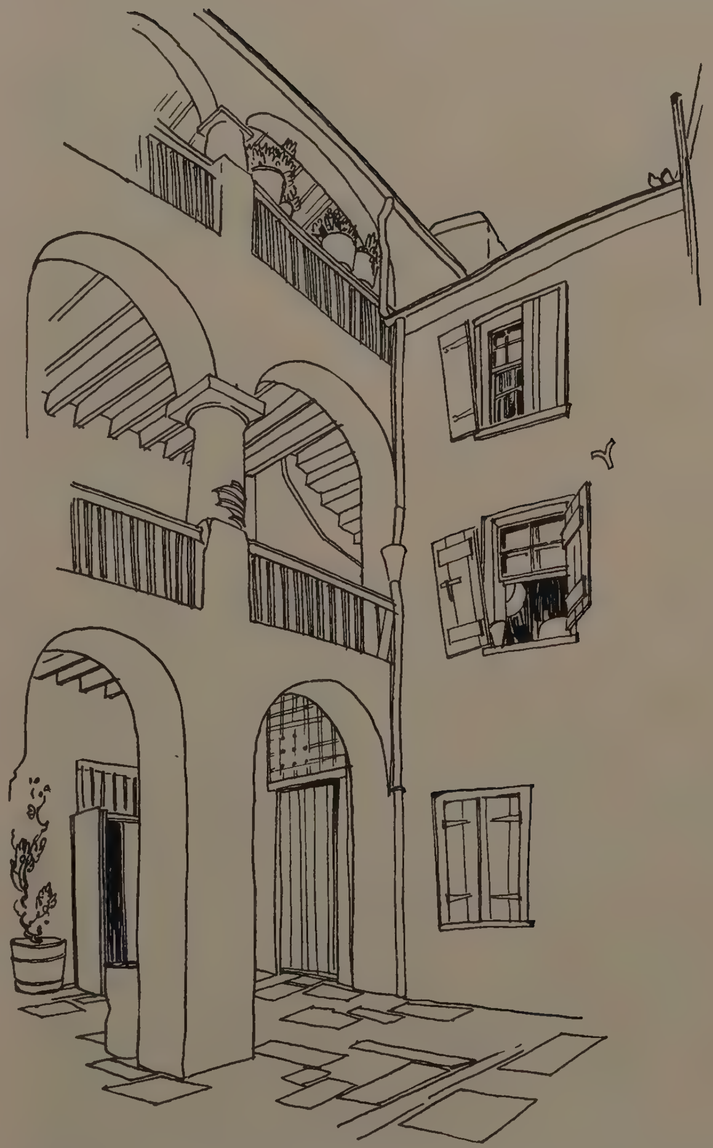
I have in mind one such house in Toulouse Street where each bay has a spread of about 17 feet. Entering here, we pass through a wide flagged alleyway, ending at the rear in a sort of open loggia, looking into the patio through elliptical arches the width of the fanlight opening above.

Then there are smaller examples and earlier, too. In the block just below the cathedral on Royal Street there exists a court (entered through a small Italian grocery) which is one of the few remaining examples of early Spanish work in arched masonry. Its arched galleries are open through three stories and, most unusual, supported by rude piers of brick and stucco that, above, are round instead of square.

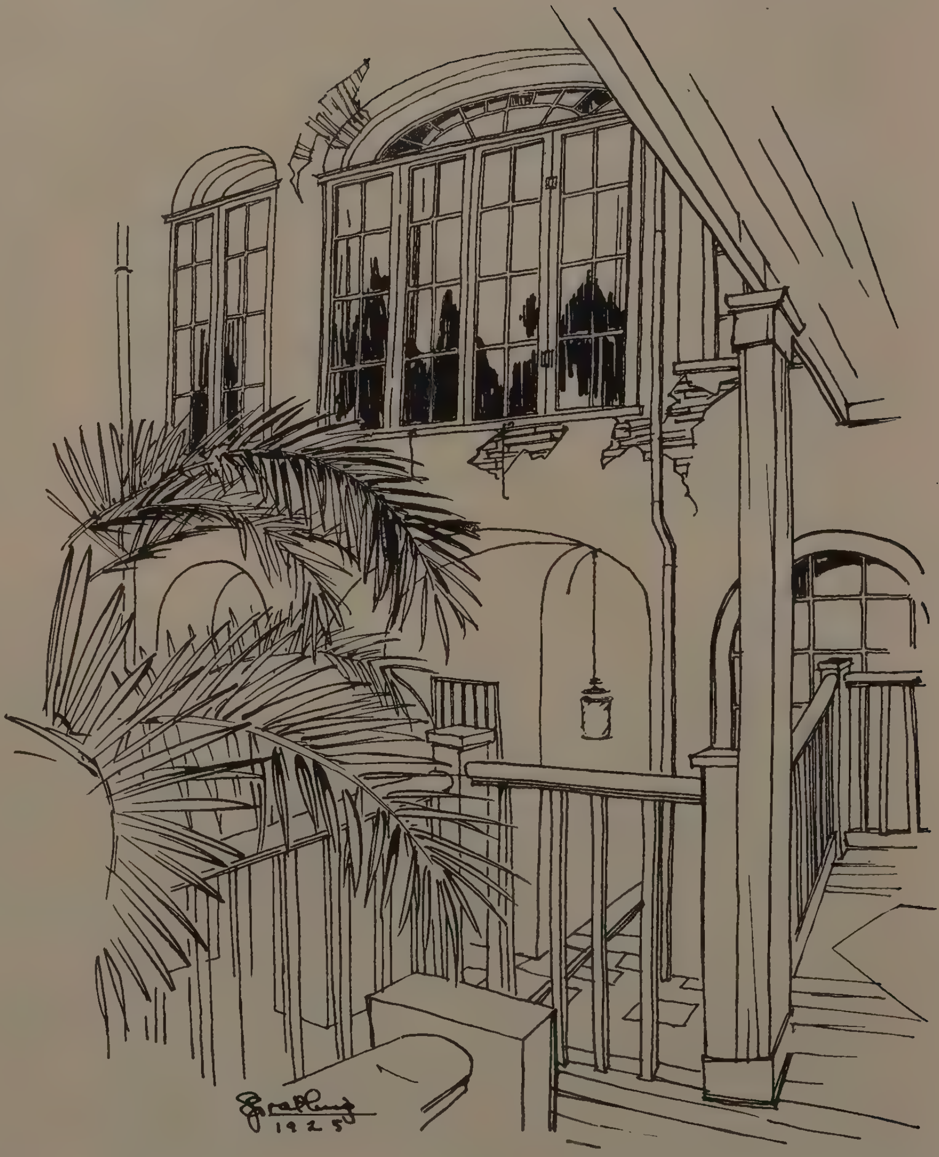
The sight-seeing busses continue to bustle people through the quarter in ever-increasing numbers, but the joy of discovery in prying around among these remnants of an Old-World atmosphere remains only for the few.



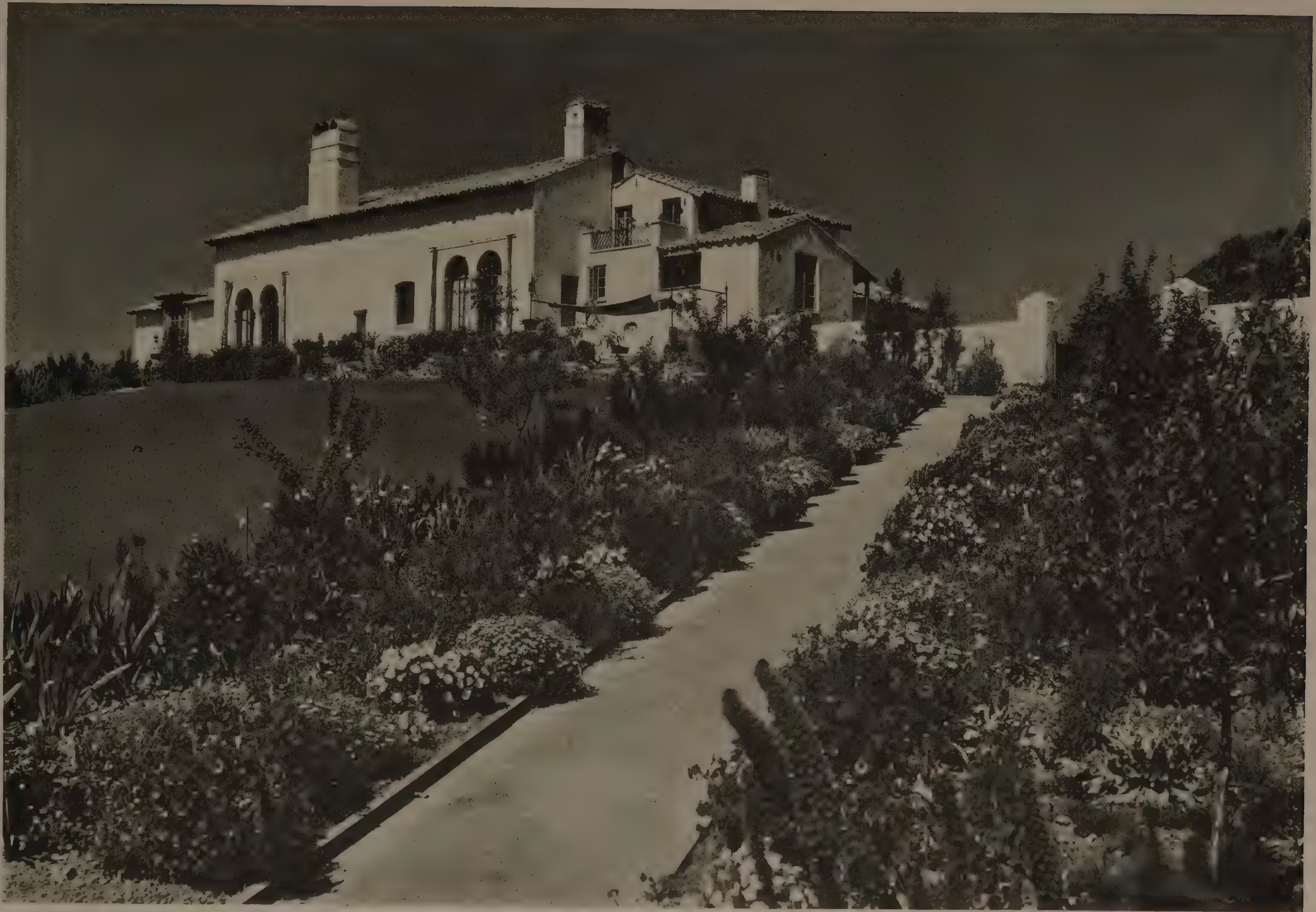
New Orleans: At 628 Toulouse Street



New Orleans: Corner of St. Ann and Royal Streets

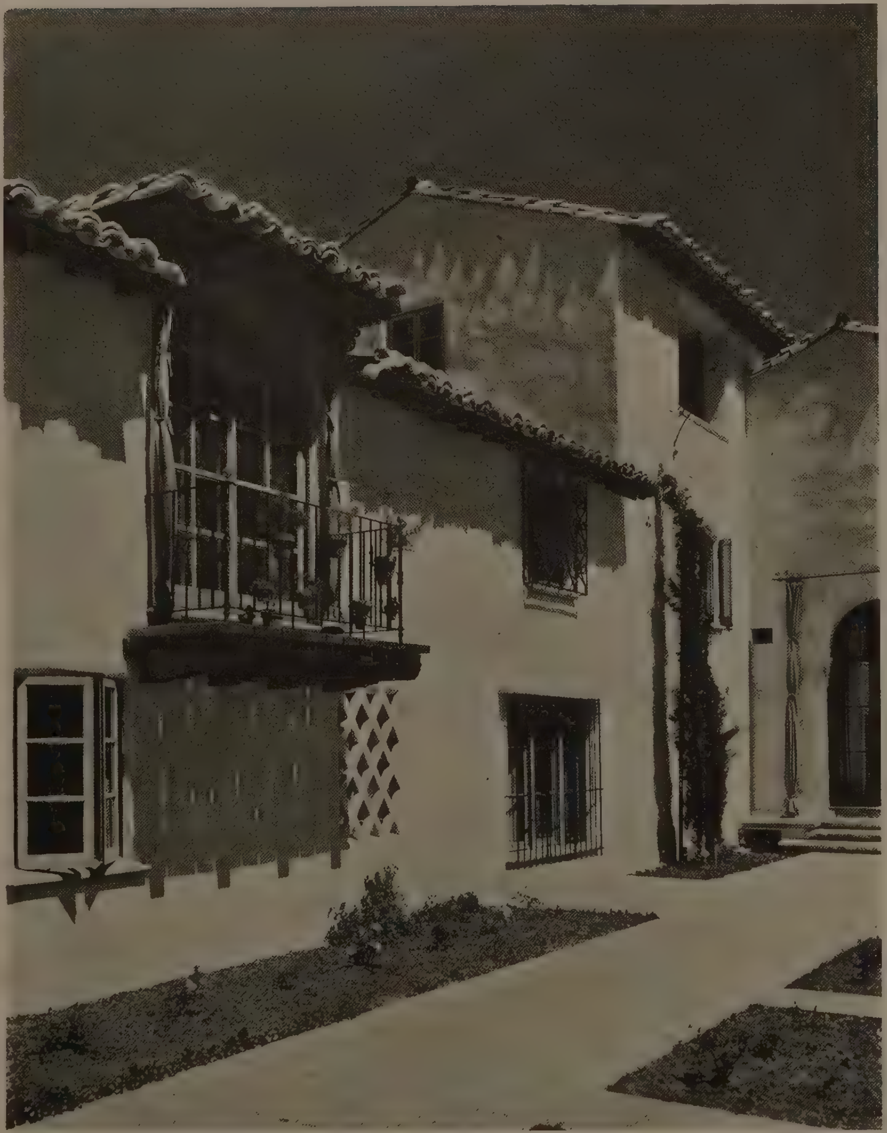


New Orleans: At 612 Royal Street

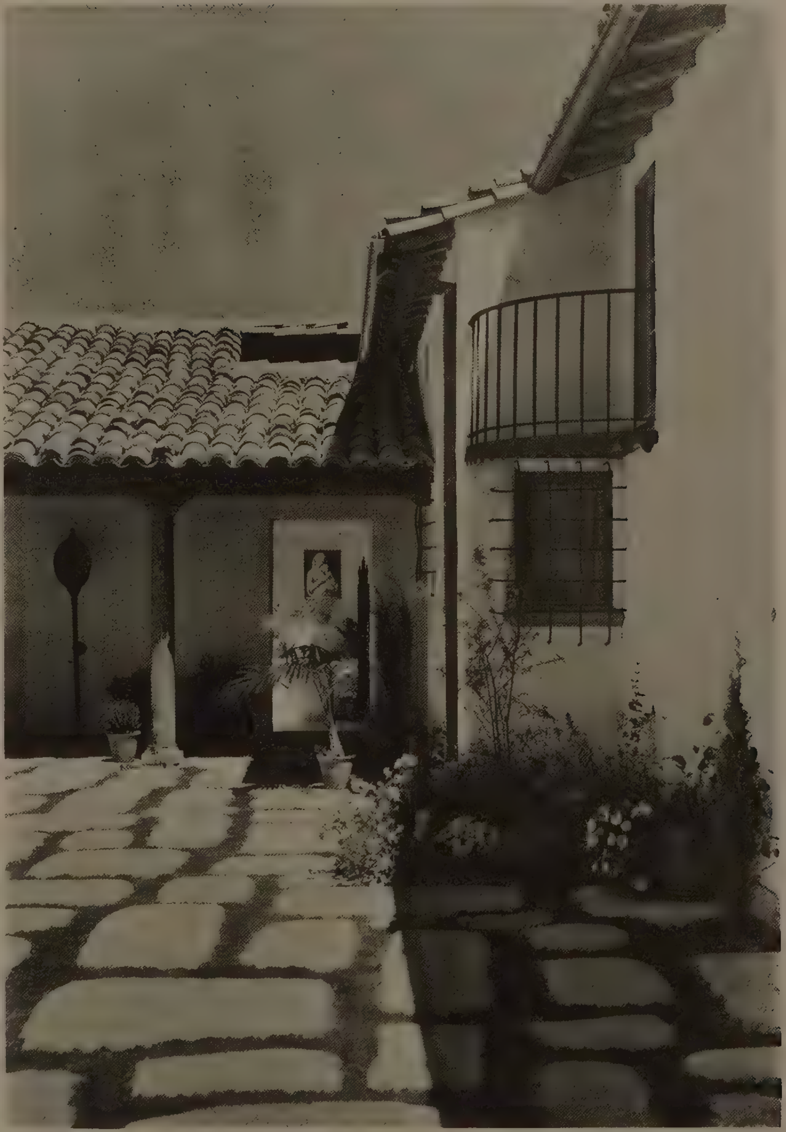


Villa Delizia, House of Garfield D. Murner, Hillsborough, Calif.

WILLIS POLK & COMPANY, ARCHITECTS

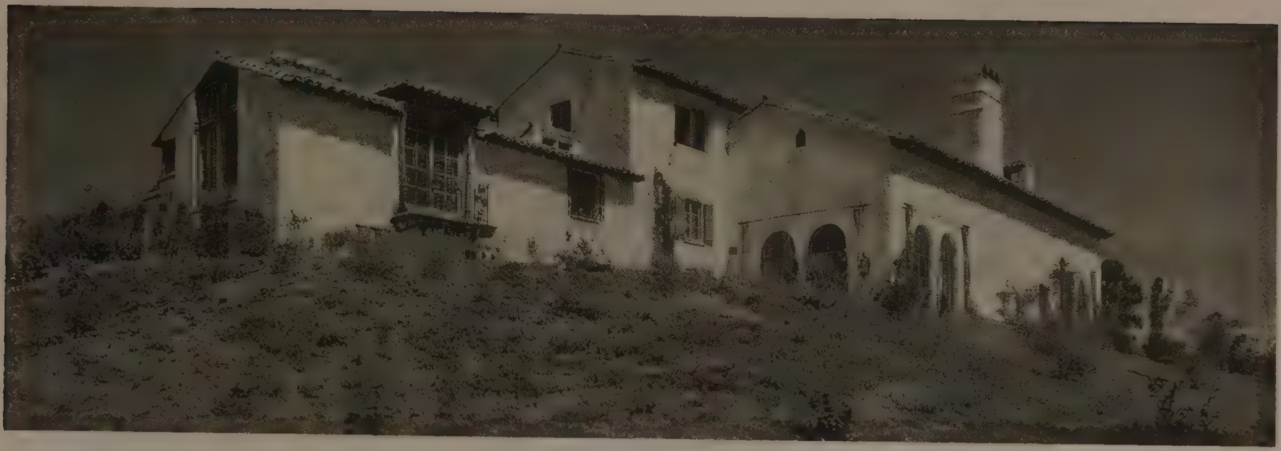


Exterior detail



In the patio

Villa Delizia, House of Garfield D. Murner
HILLSBOROUGH, CALIF.
WILLIS POLK & COMPANY, ARCHITECTS



VILLA DELIZIA,
HOUSE OF
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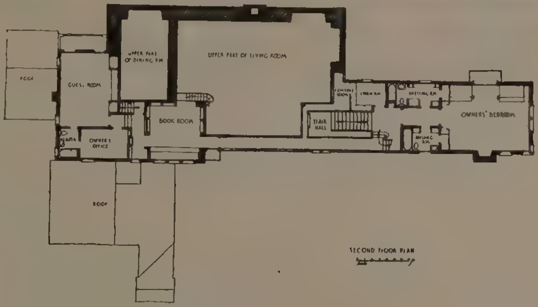

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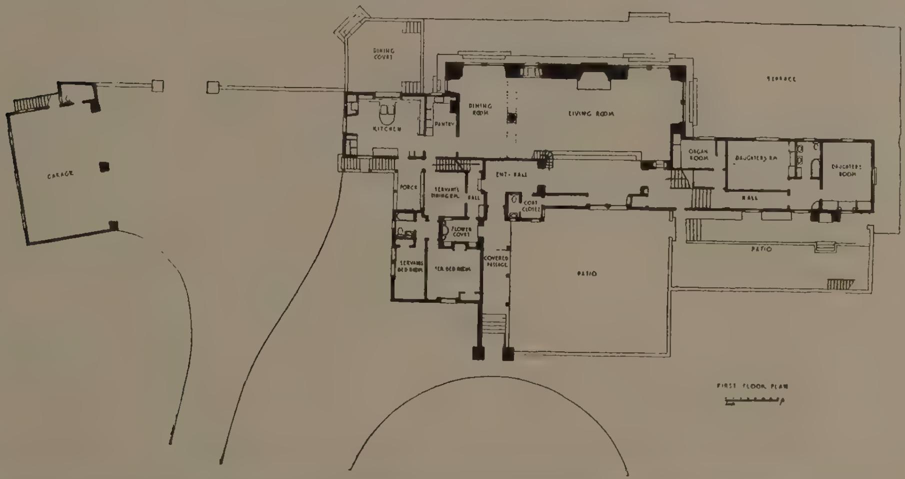
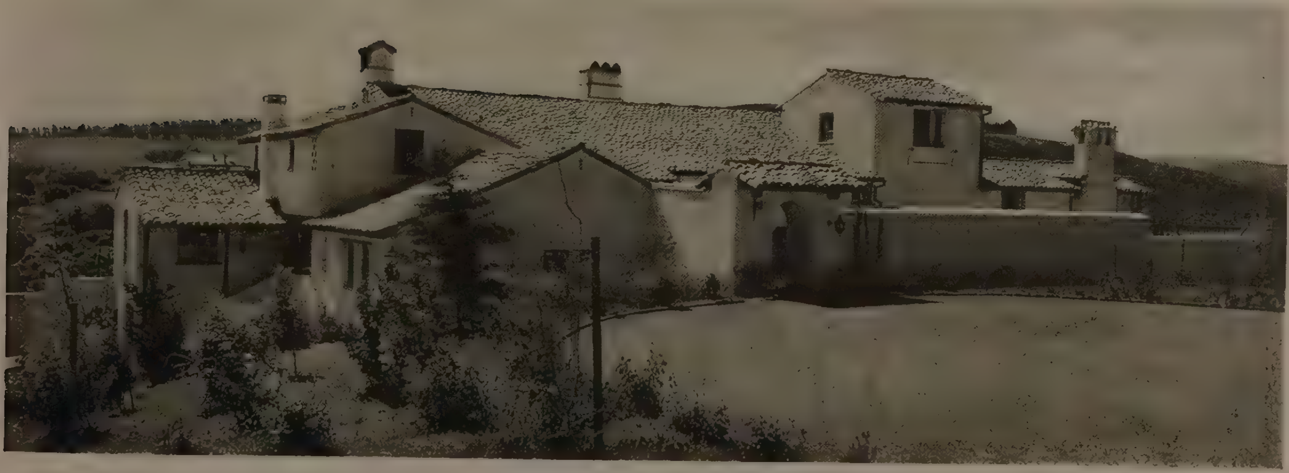
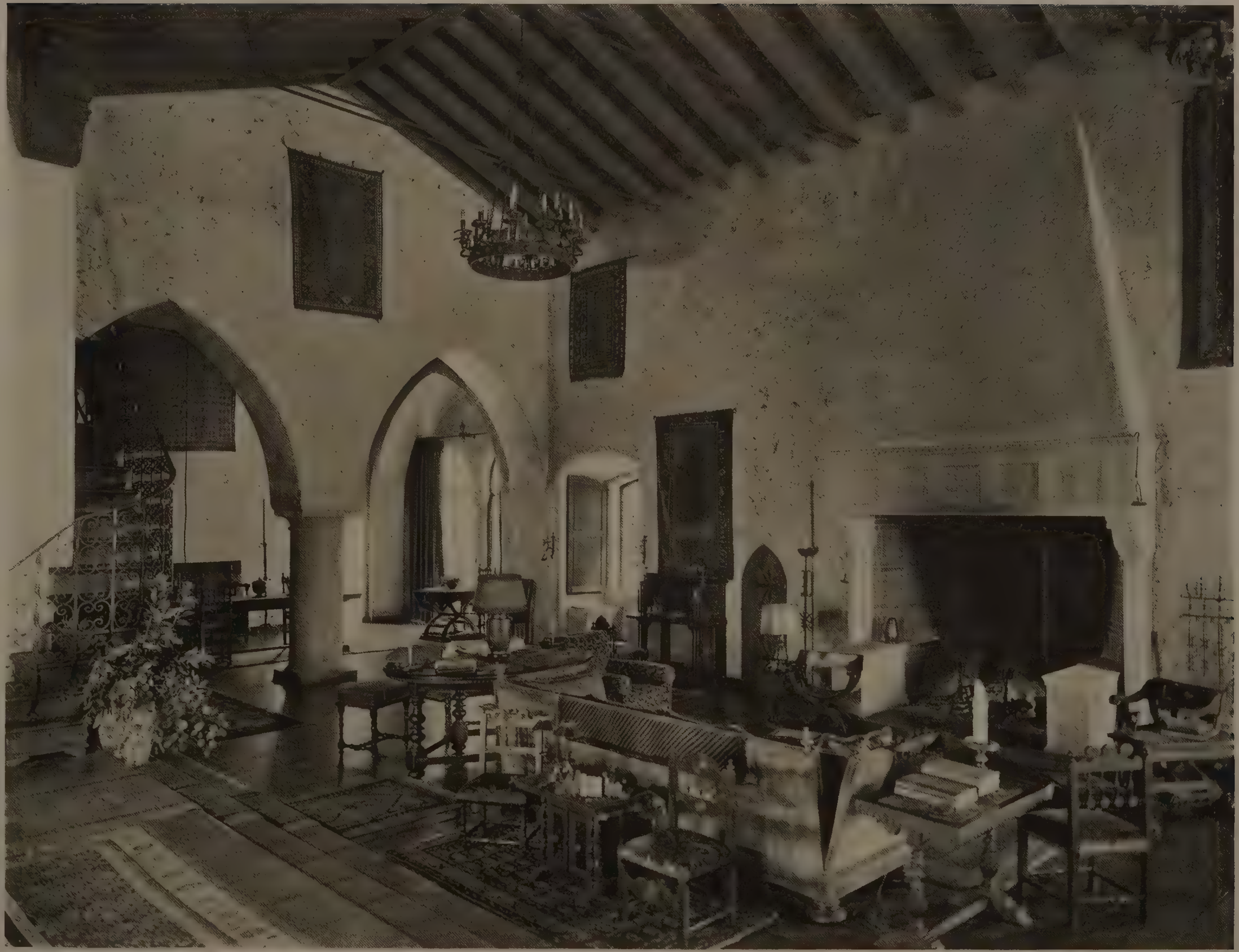


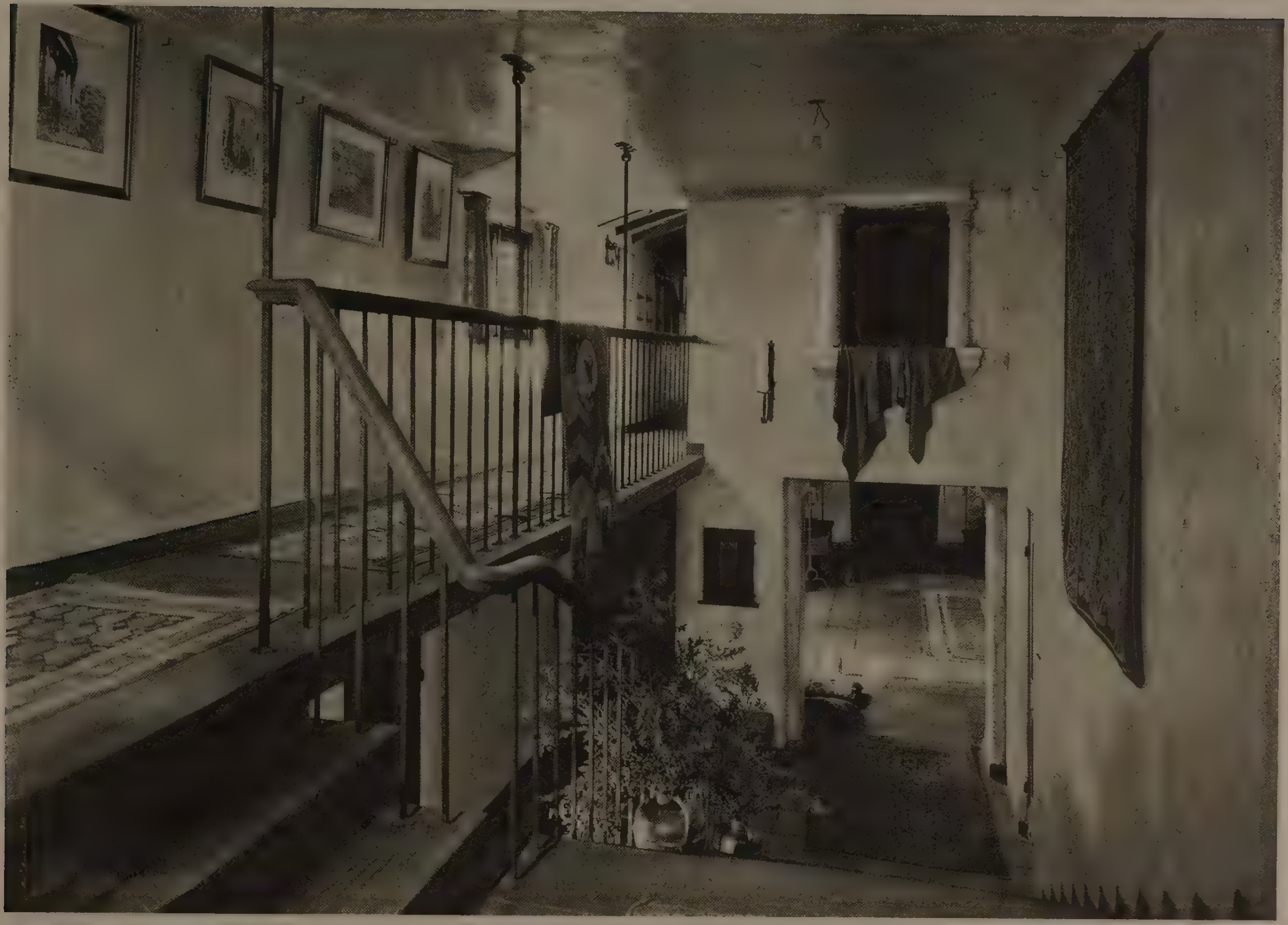




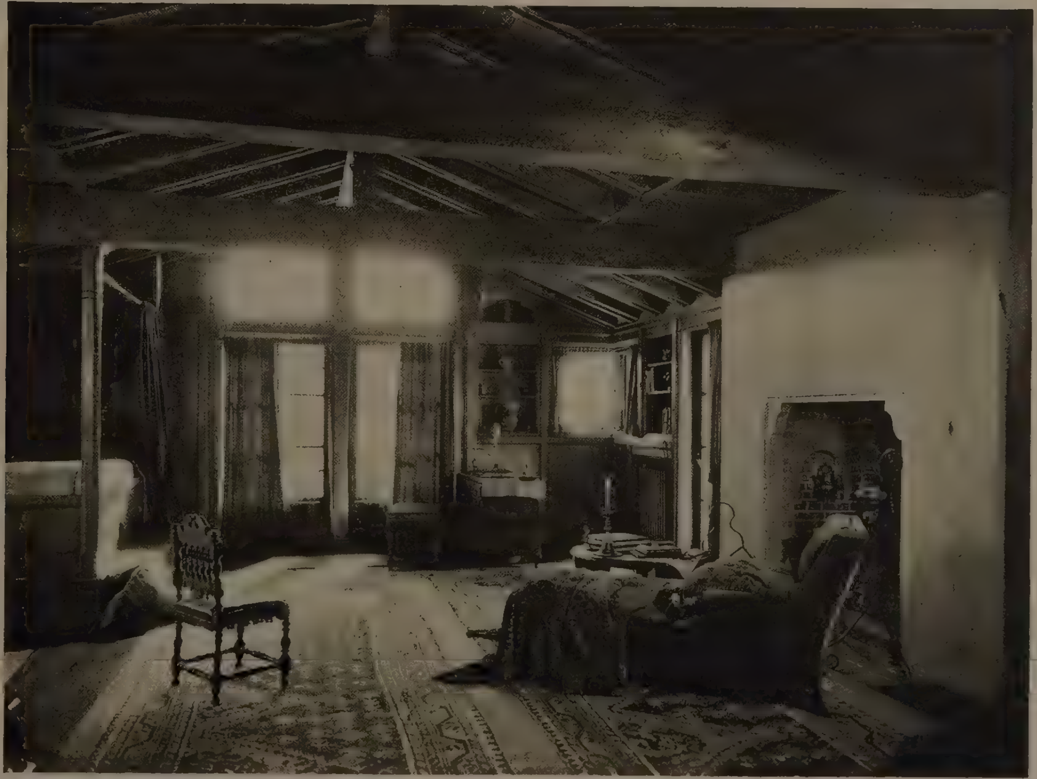
Living-room

Villa Delizia, House of Garfield D. Murner, Hillsborough, Calif.

Willis Polk & Company, Architects



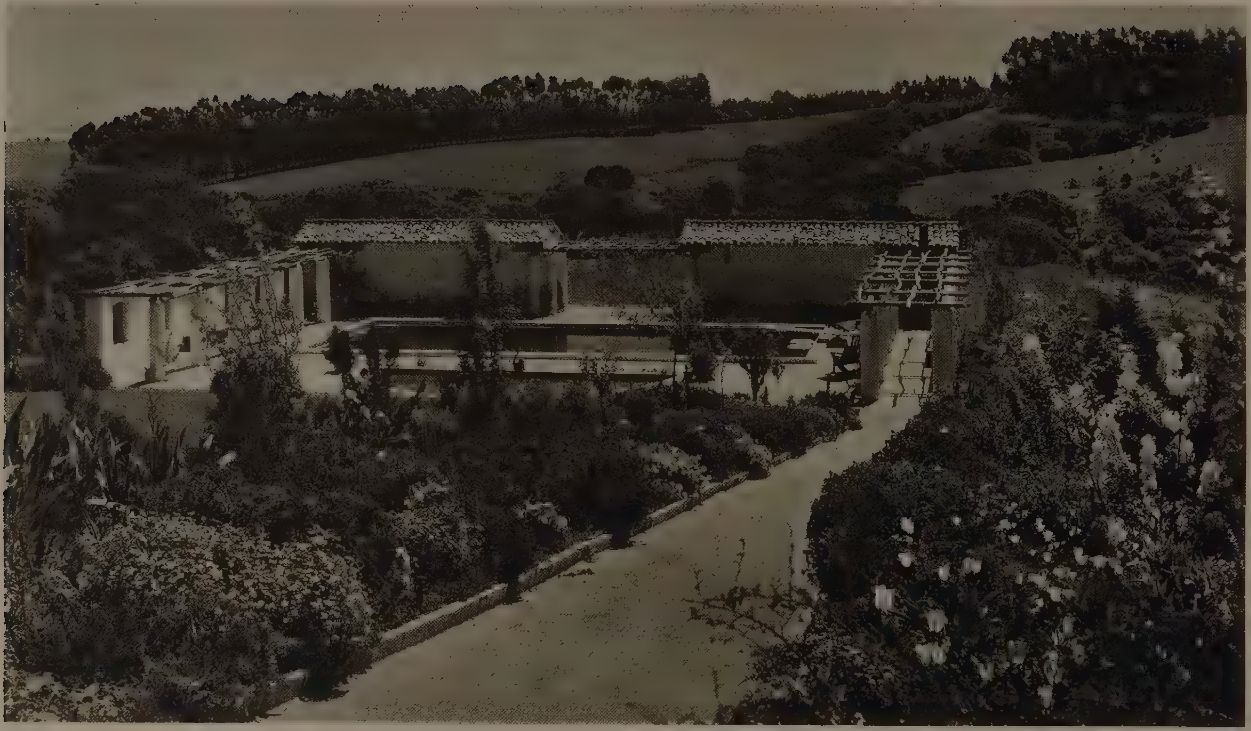
Main stairway



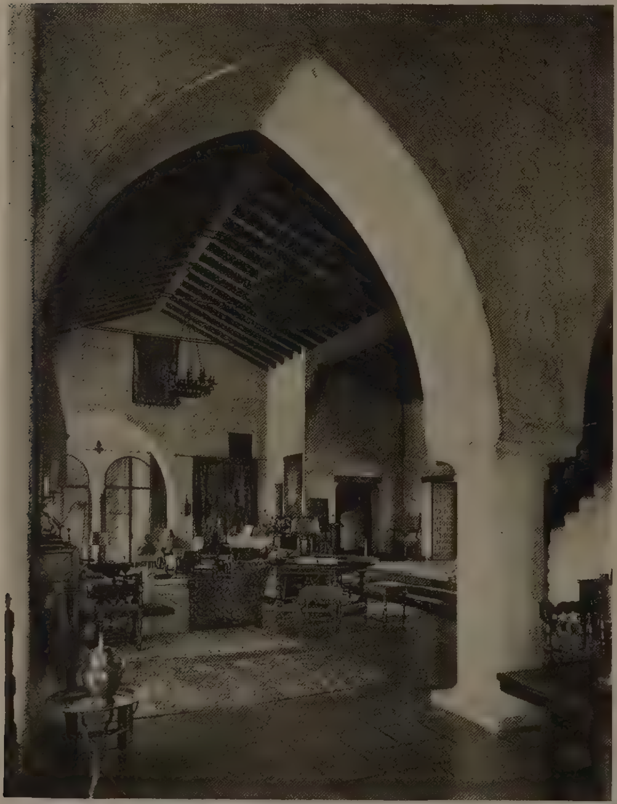
Owner's bedroom

VILLA DELIZIA, HOUSE OF GARFIELD D. MURNER, HILLSBOROUGH, CALIF.

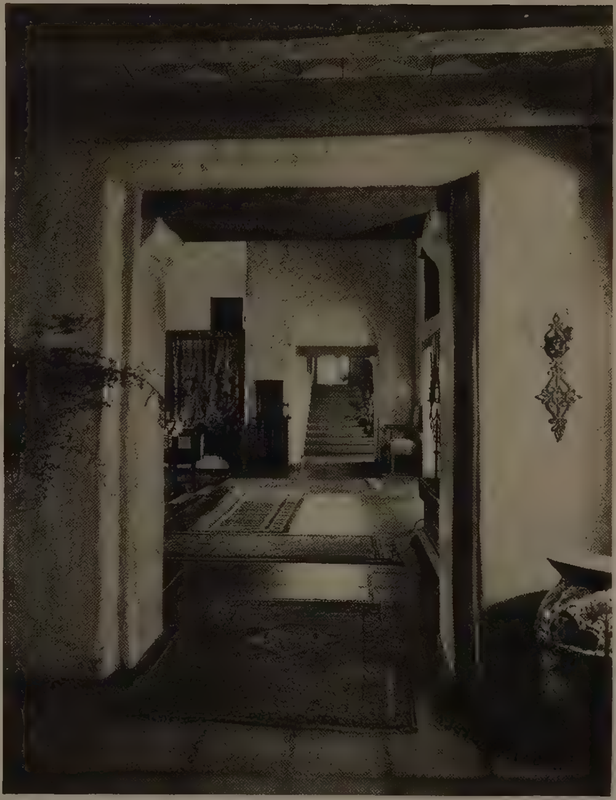
WILLIS POLK & COMPANY, ARCHITECTS



The garden and swimming-pool



Looking into the living-room



From the entrance hall

VILLA DELIZIA

HOUSE OF GARFIELD D. MURNER, HILLSBOROUGH, CALIF.

WILLIS POLK & COMPANY, ARCHITECTS

ARCHITECTURE'S PORTFOLIO
OF
CHIMNEY TOPS

Subjects of Previous Portfolios

STAIRWAY DETAILS (GEORGIAN, EARLY AMERICAN, ETC.)
February, 1927

PANELLING OF THE ENGLISH TYPES
January, 1927

STONE MASONRY TEXTURES
March, 1927

FANLIGHTS AND OTHER OVERDOOR TREATMENTS
May, 1927

DOOR HARDWARE
August, 1927

TEXTURES OF BRICKWORK
May, 1927

IRON RAILINGS
July, 1927

ENGLISH CHIMNEYS
April, 1927

GABLE ENDS
October, 1927

PALLADIAN MOTIVES
September, 1927

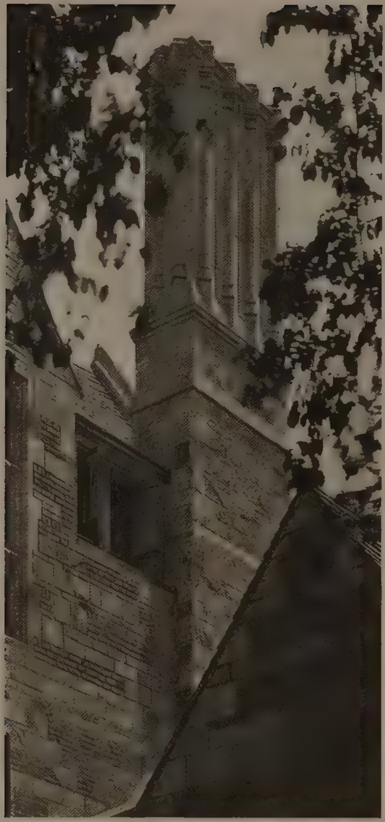
CIRCULAR AND OVAL WINDOWS (CLASSIC AND RENAISSANCE)
December, 1927

BUILT-IN BOOKCASES
January, 1928

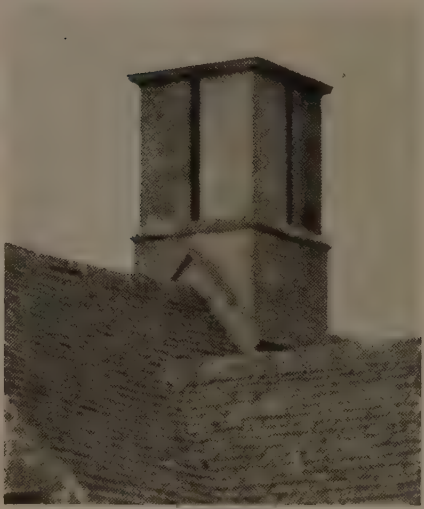
COLONIAL TOP-RAILINGS OF WOOD
November, 1927

SUBJECTS IN PREPARATION FOR FUTURE ISSUES

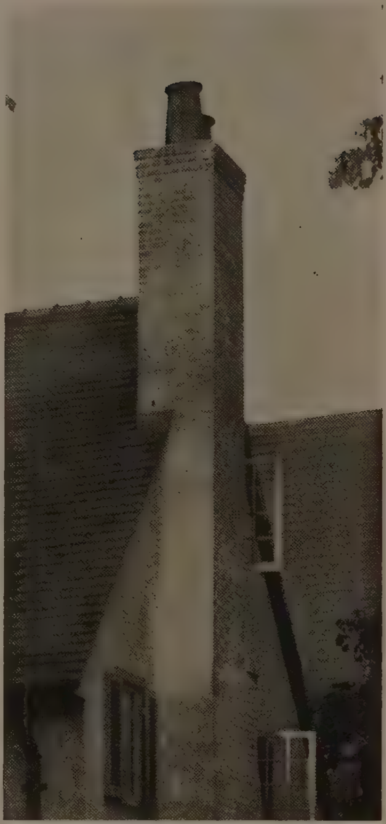
Beamed Ceilings
Cupolas
Door Hoods
Bay Windows
Leaded Glass Medallions
Cornices of Wood
Decorative Plaster Ceilings
Garden Steps
English Fireplaces
Floors of Wood
Elevator Doors
Garden Gates
Garden Walls
Rain-Conductor Heads
Stucco Textures
Treillage



JAMES GAMBLE ROGERS



LOWER SWELL, ENGLAND



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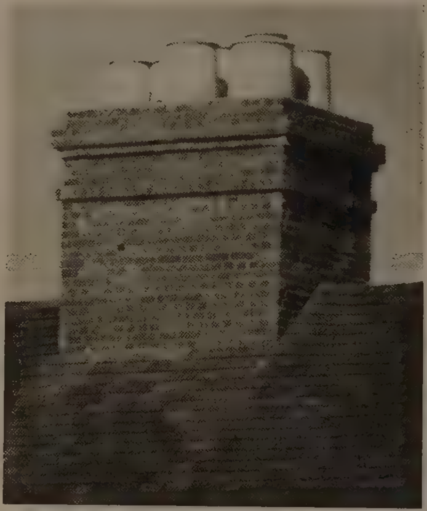

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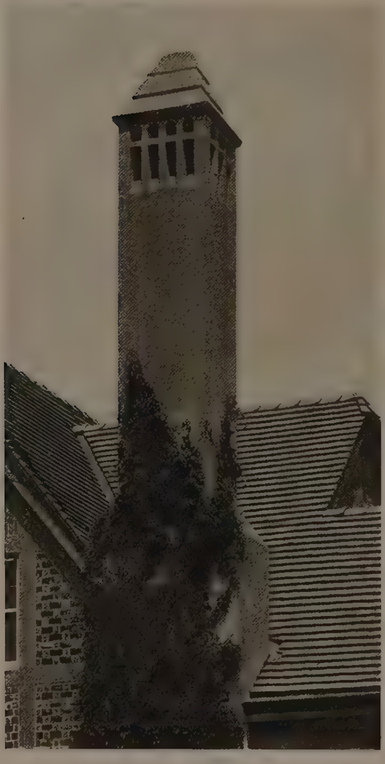
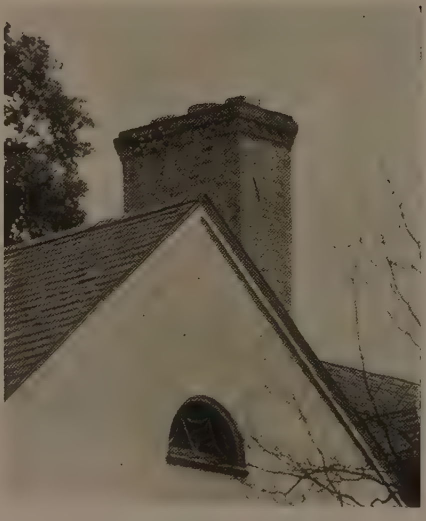
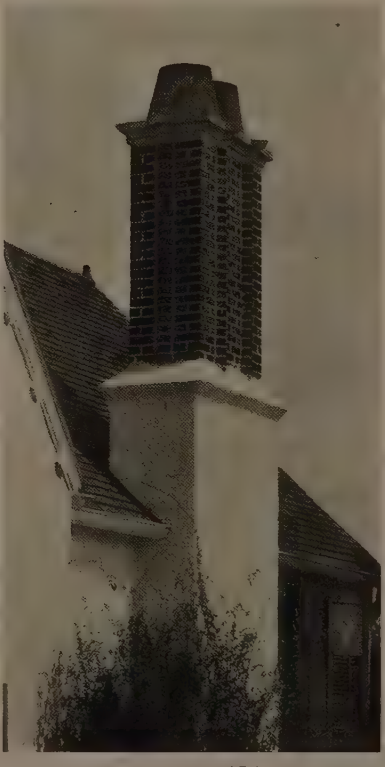


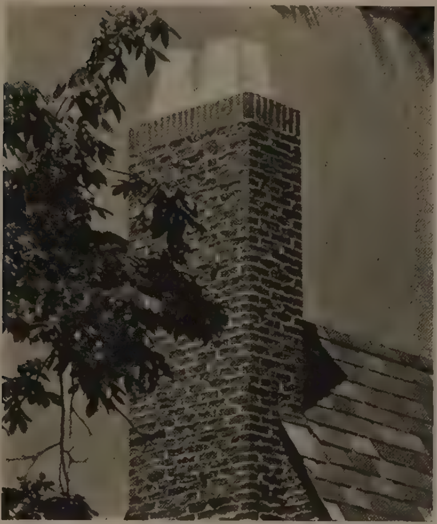
SAGE FOUNDATION HOMES CO.



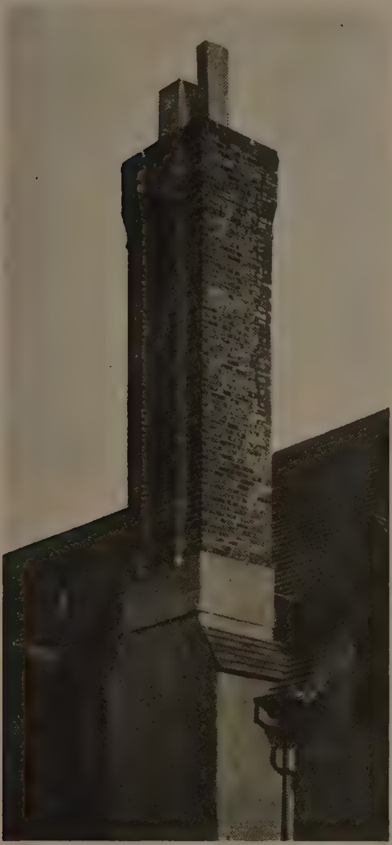
PEABODY, WILSON & BROWN



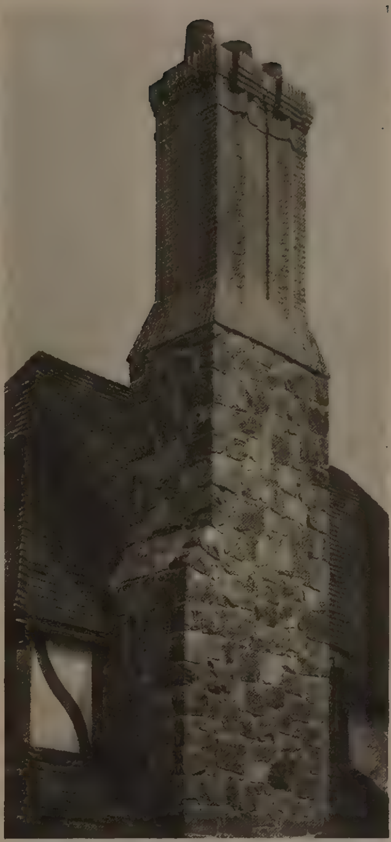
ADAMS & ADAMS



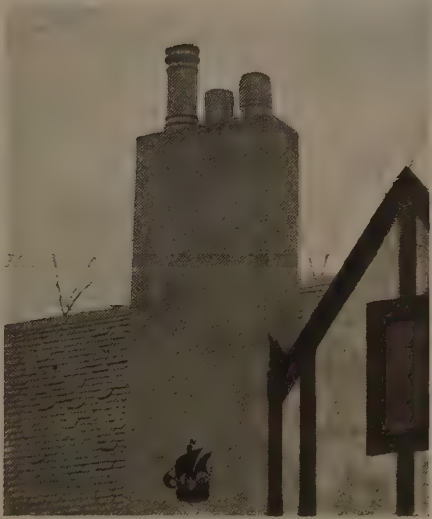
WARREN, KNIGHT & DAVIS



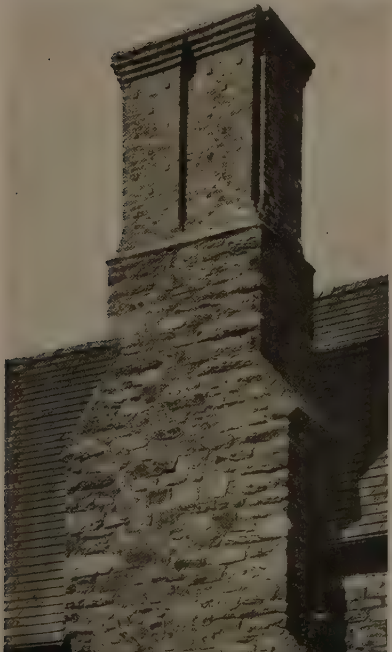
POLHEMUS & COFFIN



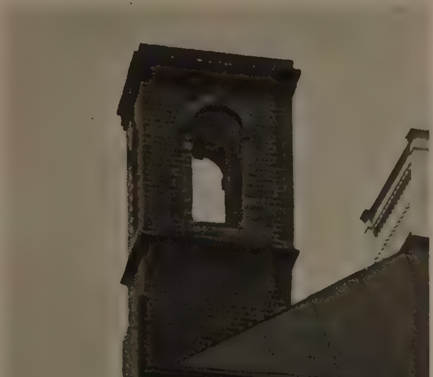
TOOKER & MARSH



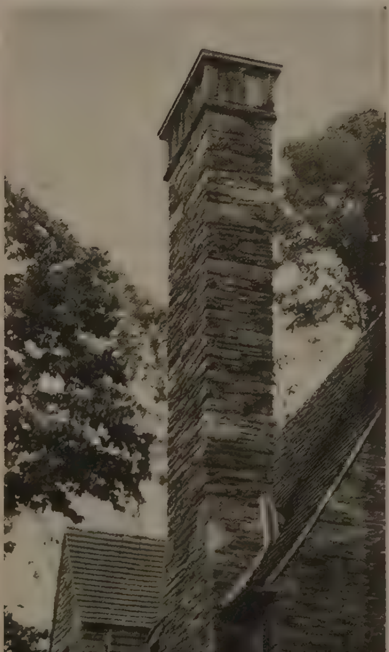
BERNARD WELLS



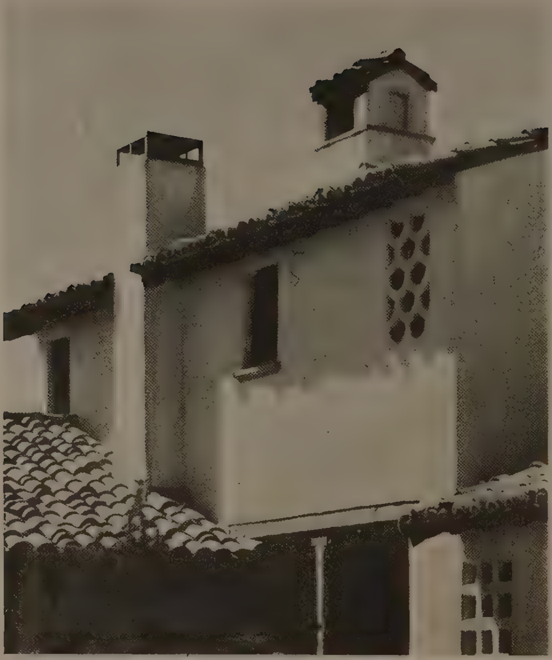
DAVIS, DUNLAP & BARNEY



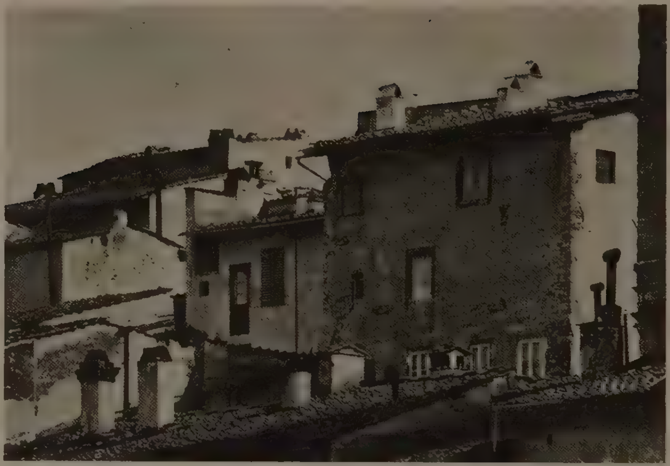
JOHN MACPHERSON



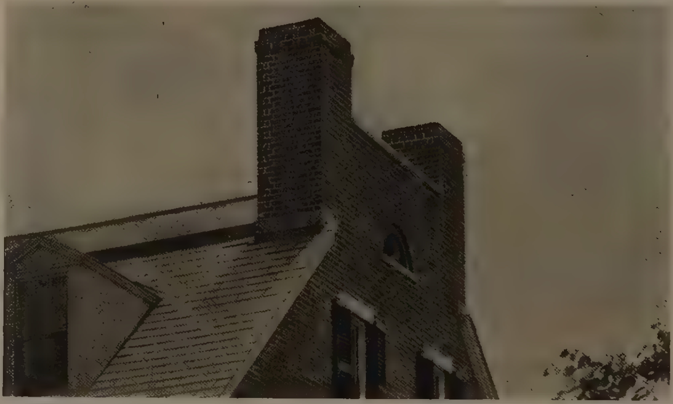
WILLING, SIMS & TALBUTT



WILLIS POLK & CO.



FLORENCE, ITALY



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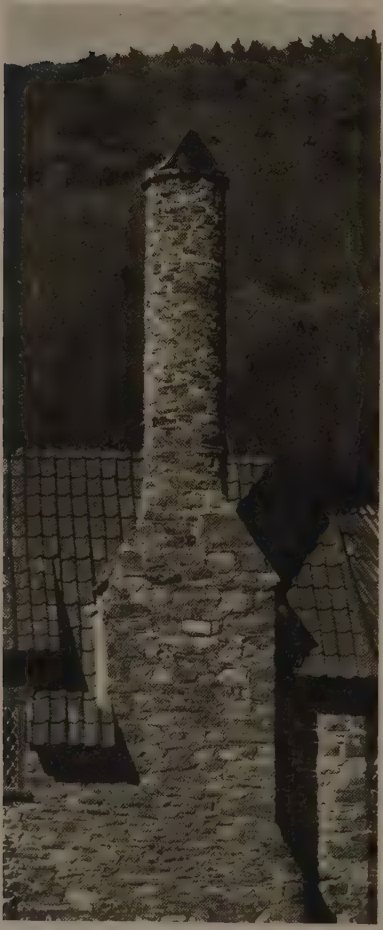
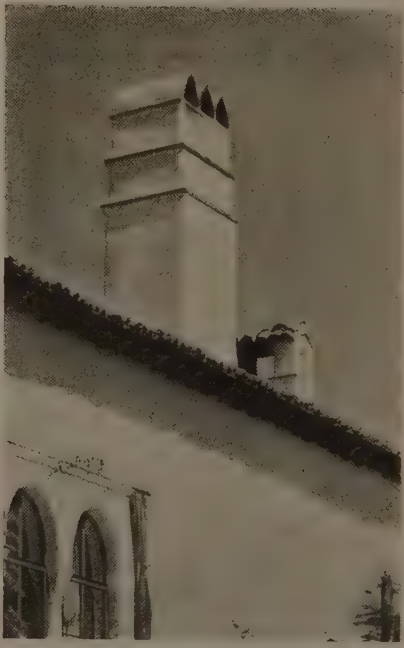
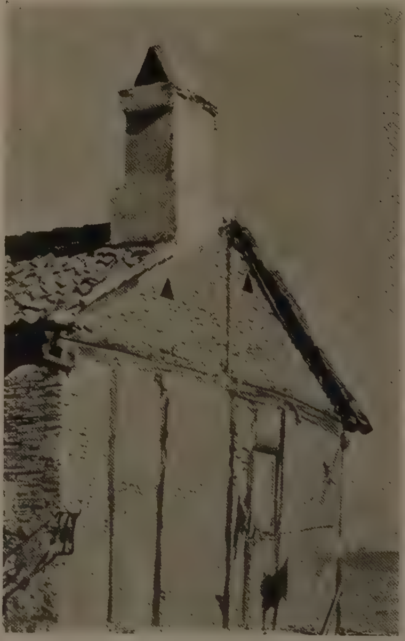


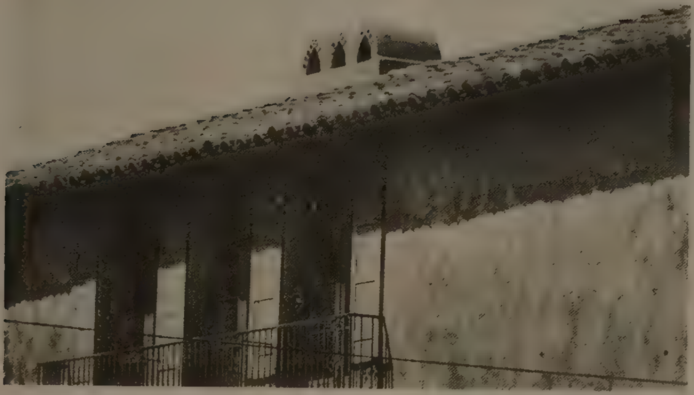
ALLERFORD, ENGLAND



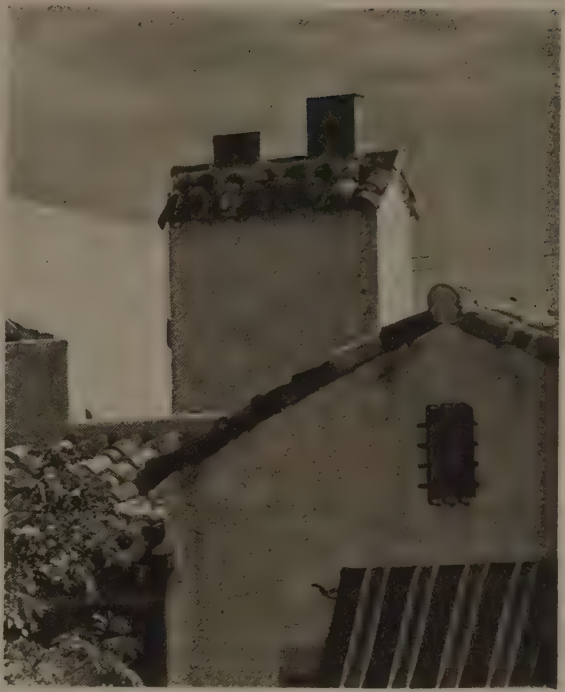
WILLIS POLK & CO.



SEGOVIA, SPAIN



STILES O. CLEMENTS



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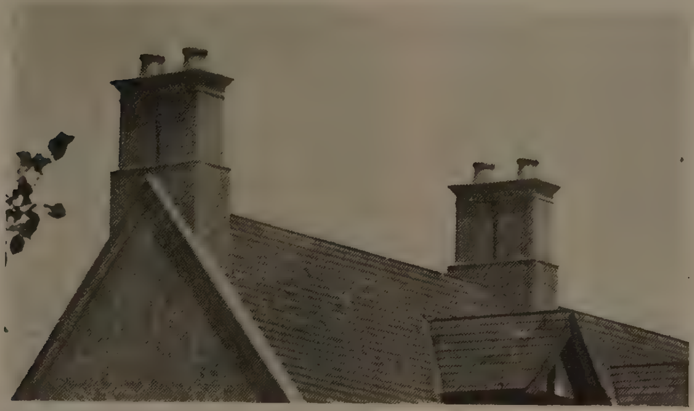
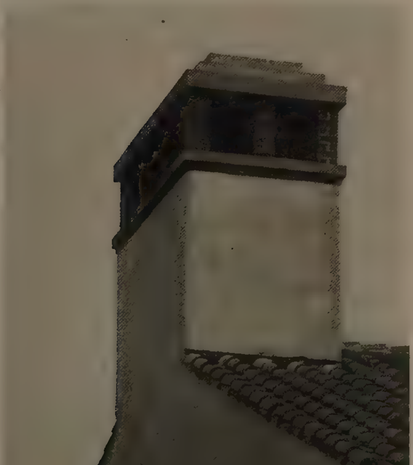


SULGRAVE MANOR



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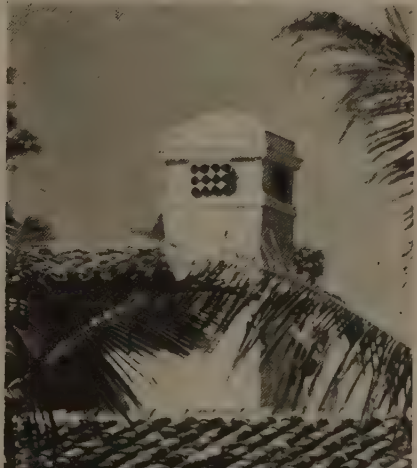
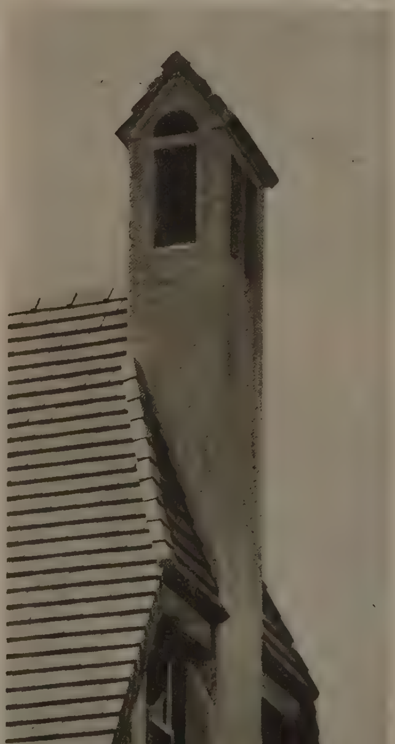
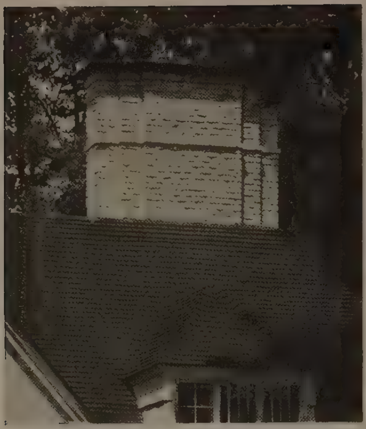
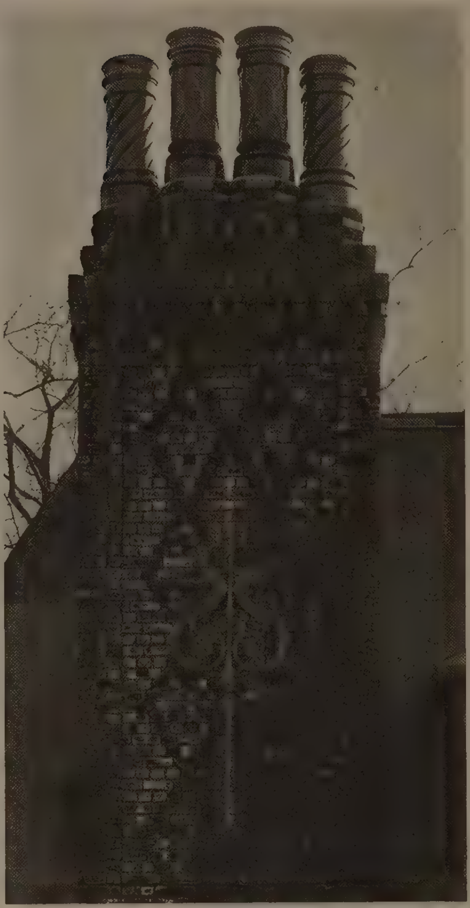


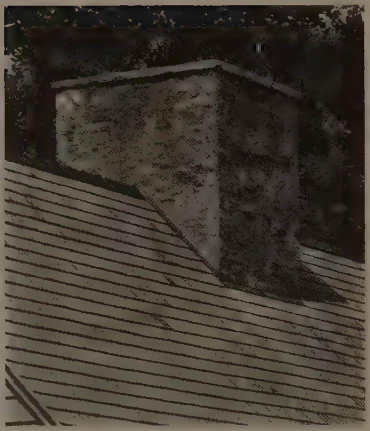
W. DE GARMO

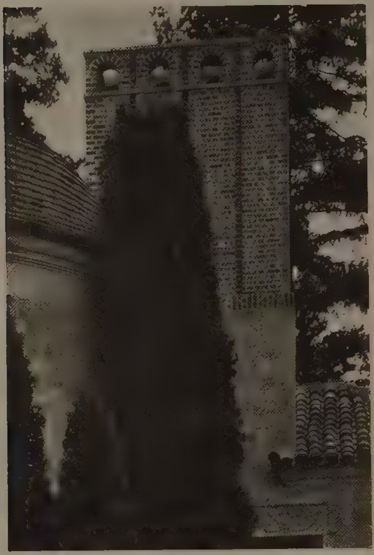


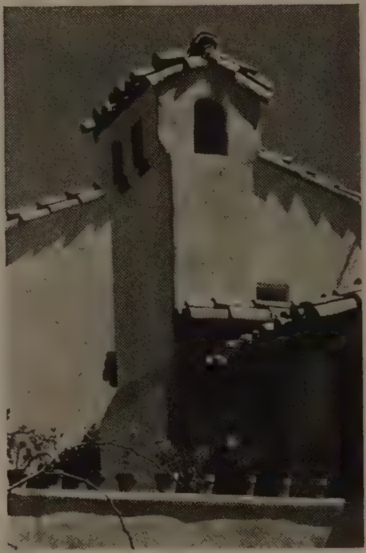
SAGE FOUNDATION HOMES CO.


LEWIS BOWMAN


CHARLES B. KING


DAVIS, DUNLAP & BARNEY


HERMAN BROOKMAN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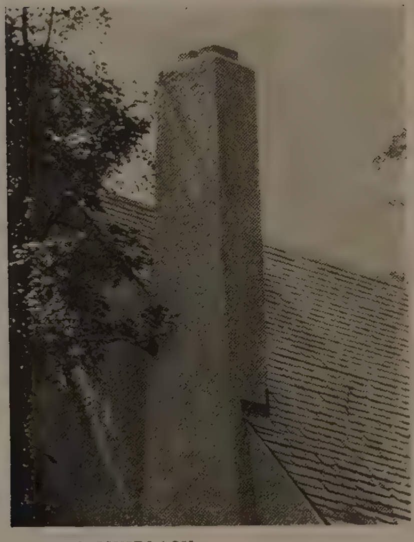
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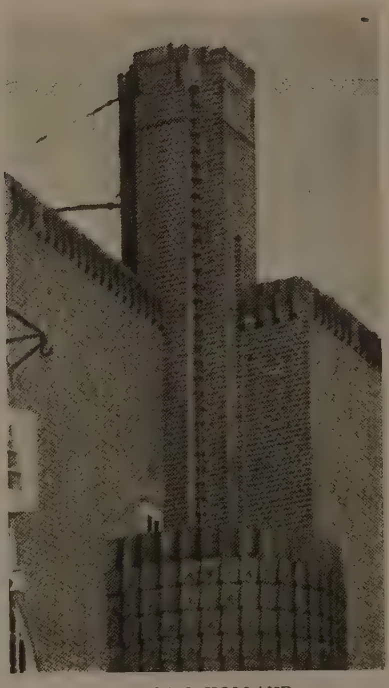
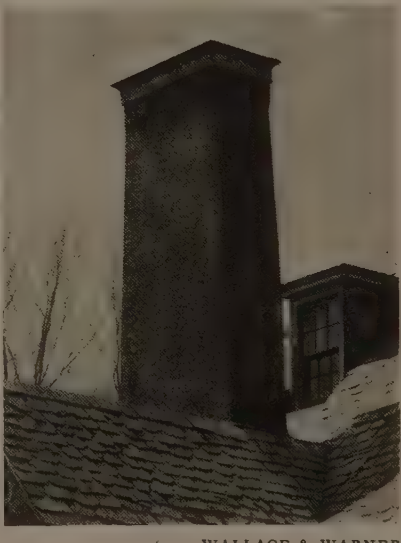
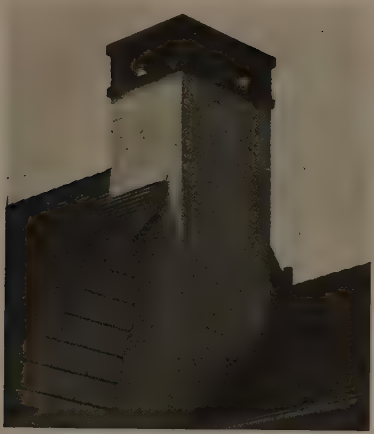
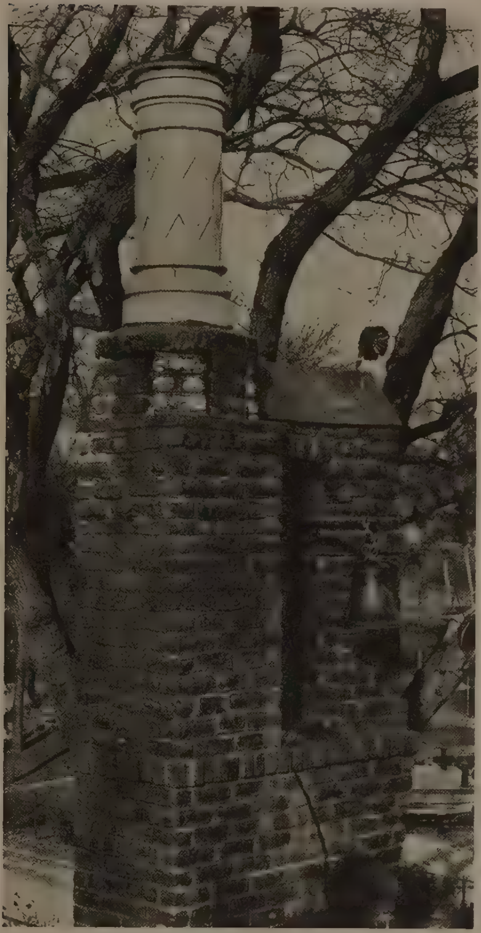

AMSTERDAM, HOLLAND


WALLACE & WARNER



PATTERSON & DULA



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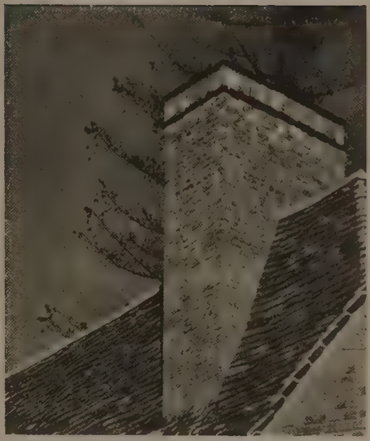

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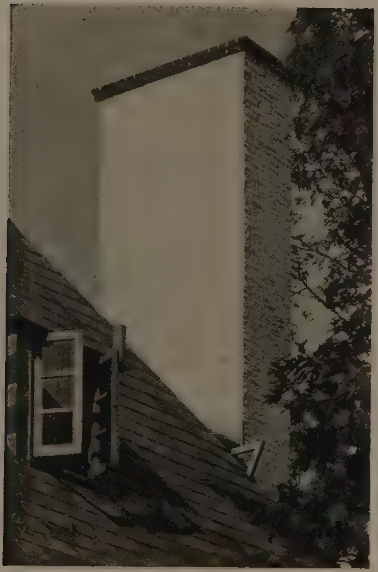
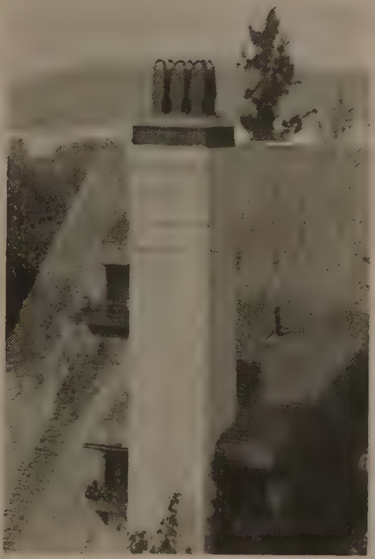
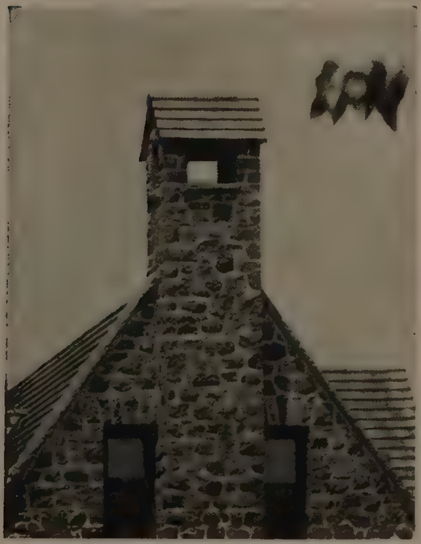


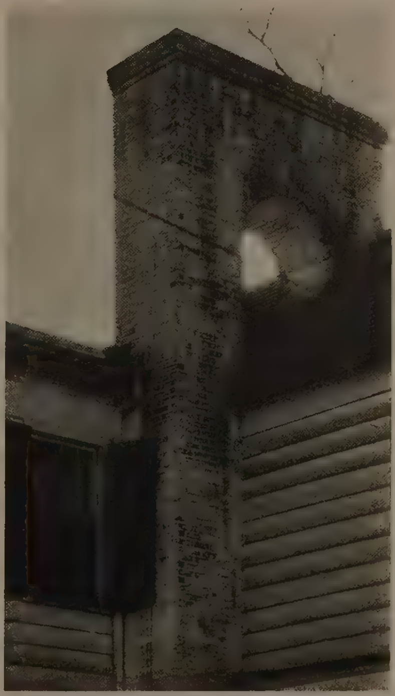
EDWARD PALMER, JR.



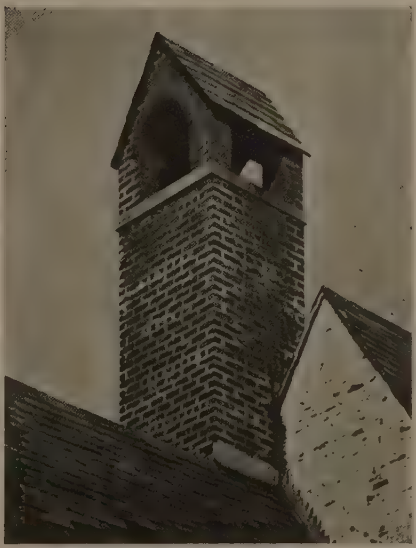
A. SAXE



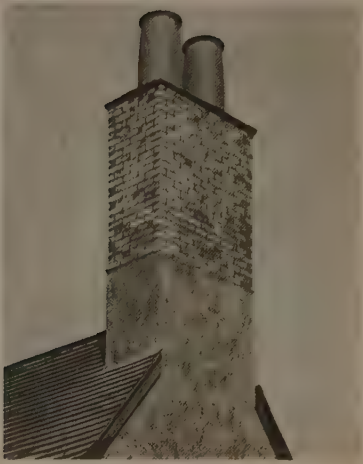
SAGE FOUNDATION HOMES CO.



HENTZ, REID & ADLER



GUILBERT & BETELLE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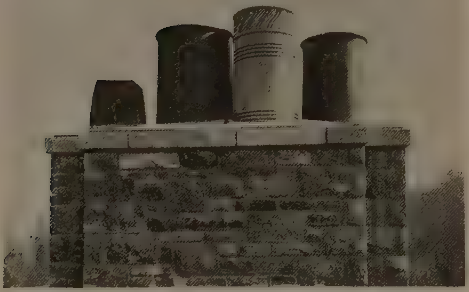
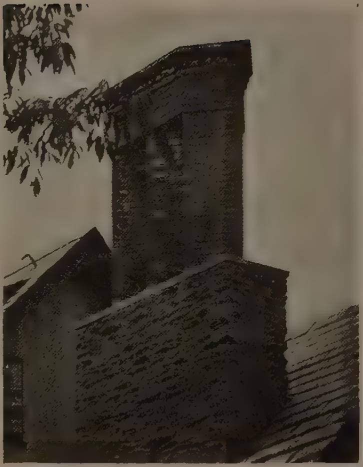

WETHERILL P. TROUT,
LLEWELLYN PRICE, ASSOCIATED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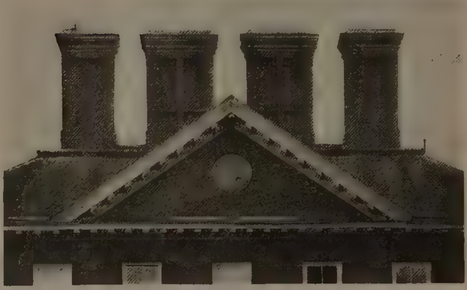
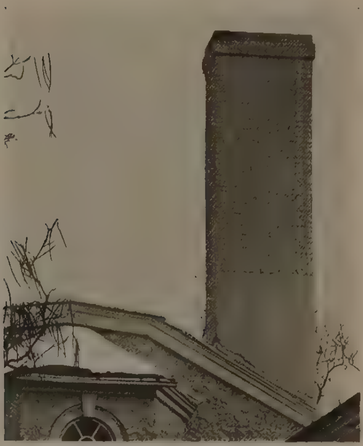
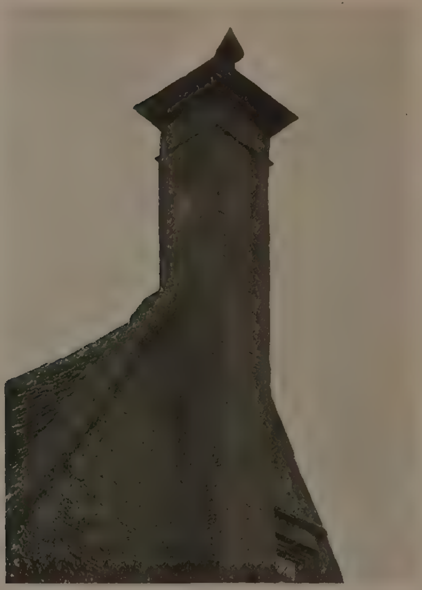
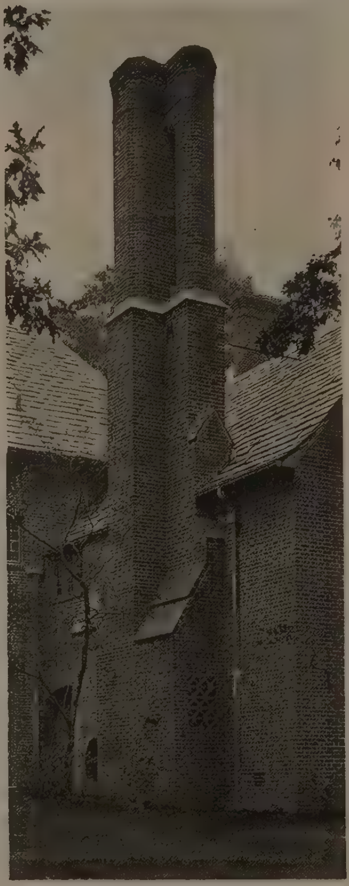
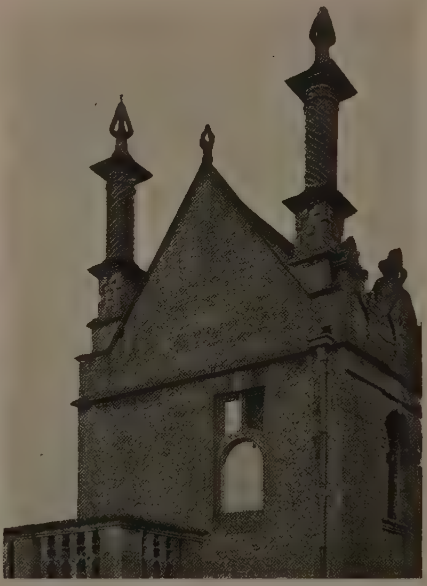

WINSLOW HOUSE,
BUCKINGHAMSHIRE, ENGLAND

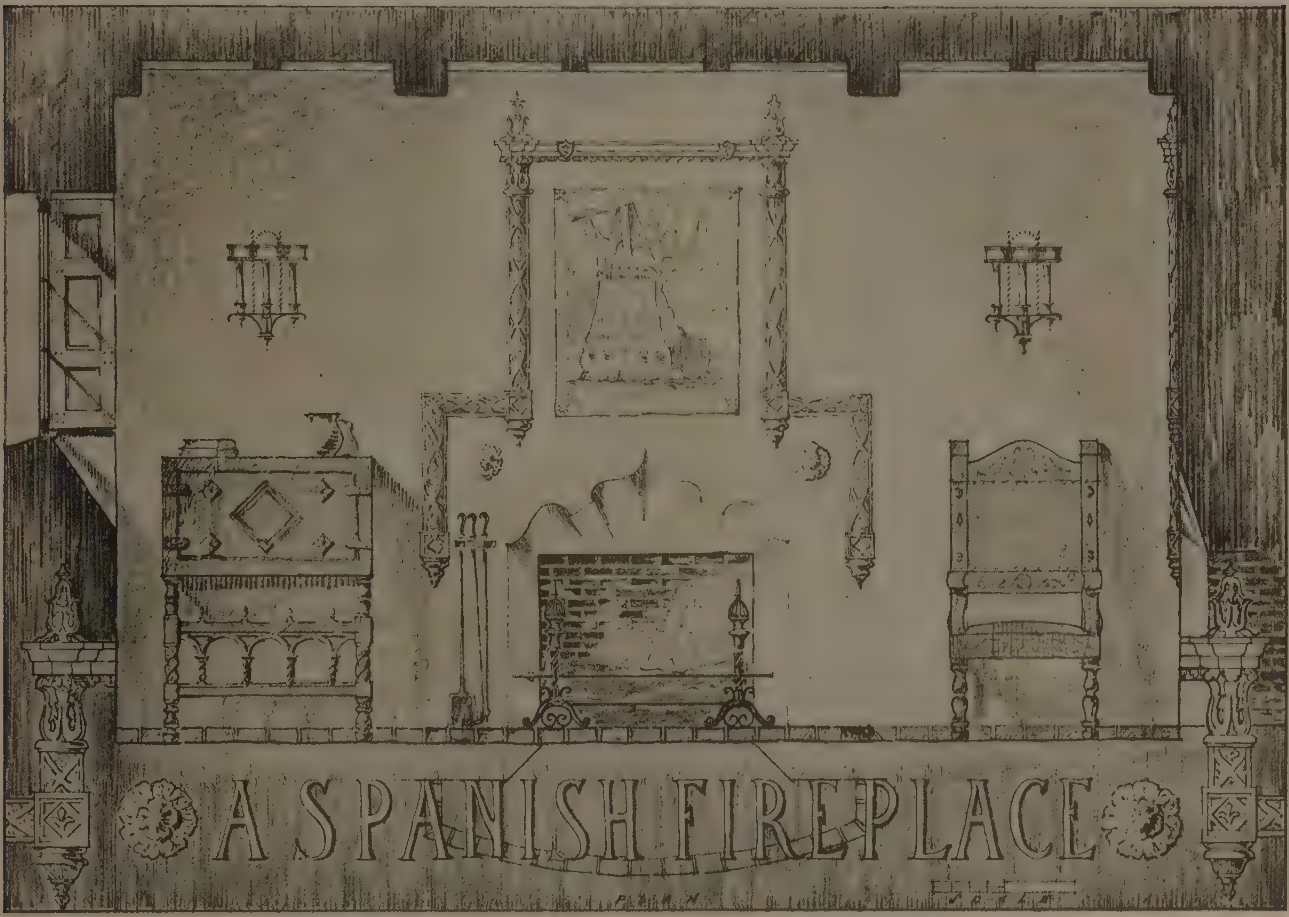

BELMONT MANSION, PHILADELPHIA

HERMAN BROOKMAN


WESTERN SUBEDGE, GLOUCESTERSHIRE


B. G. GOODHUE ASSOCIATES


CHIPPINGCAMPDEN MANOR



Design Awarded First Prize   By Frederick G. Busch, Providence, R. I.

ARCHITECTURE'S Competition X

Report of the Judges

THE programme for this competition called for the design of "The fireplace end of a living-room in a house adapted very simply and inexpensively from the Spanish. The width of the room is 15 feet; height, 9 feet to bottom of ceiling-beams. Show elevation of room end at ¾-inch scale; plan and section of fireplace, and any larger-scale details."

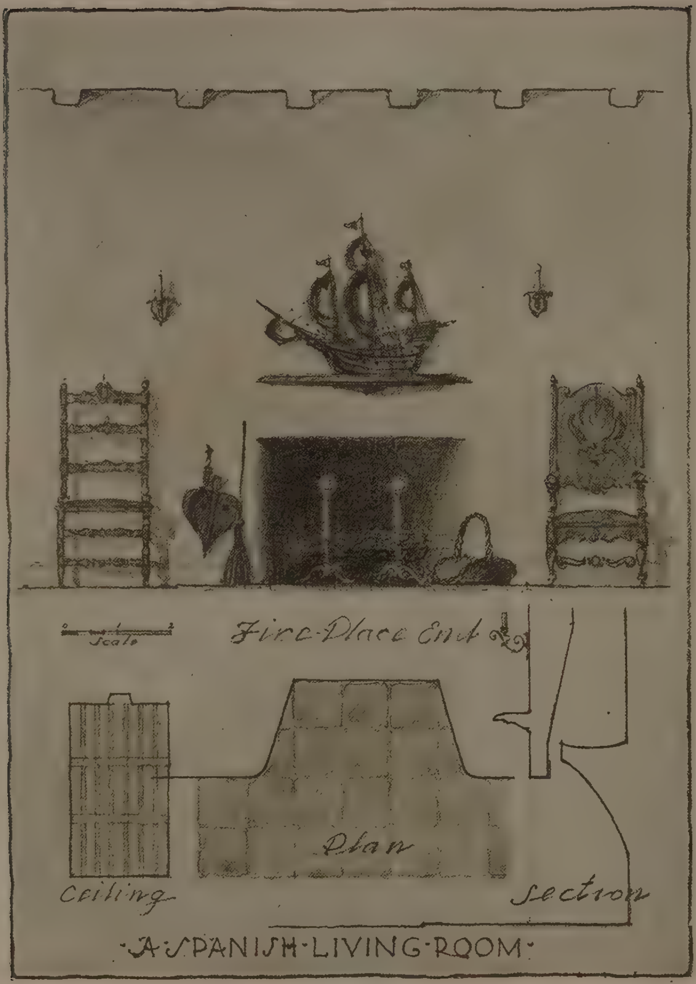
Whether the present series of competitions is becoming more widely known or whether the present subject proved to be an unusually popular one, is not known. That one or the other must be true is indicated by the fact that the entries were far more numerous than in any of the previous competitions.

The judges have awarded the prizes to the following contestants: First Prize—Frederick G. Busch, Providence, R. I. Second Prize—H. Roy Kelley, Pasadena, Calif. Third Prize—Malcolm P. Cameron, New York, N. Y. Fourth Prize—A. Redfern Cornwell, Hollywood, Calif. Fifth Prize—A. A. Cooling, Urbana, Ill.

The words "very simply and inexpensively" seemed to have been overlooked by numerous contestants, and it was these for the most part who also erred most grievously in the matter of scale. The fact that there were numerous variations of a few fireplace motives indicated possibly a paucity of available documentary material or a particularly strong appeal on the part of several of these documents to many of the contestants.

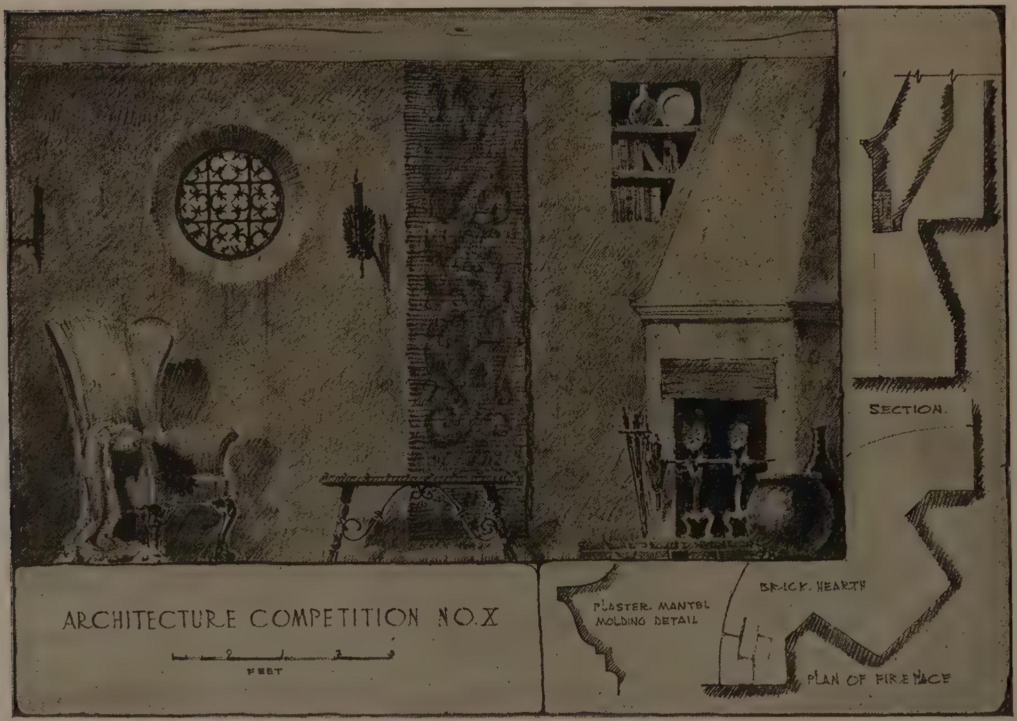
Second-Prize Design

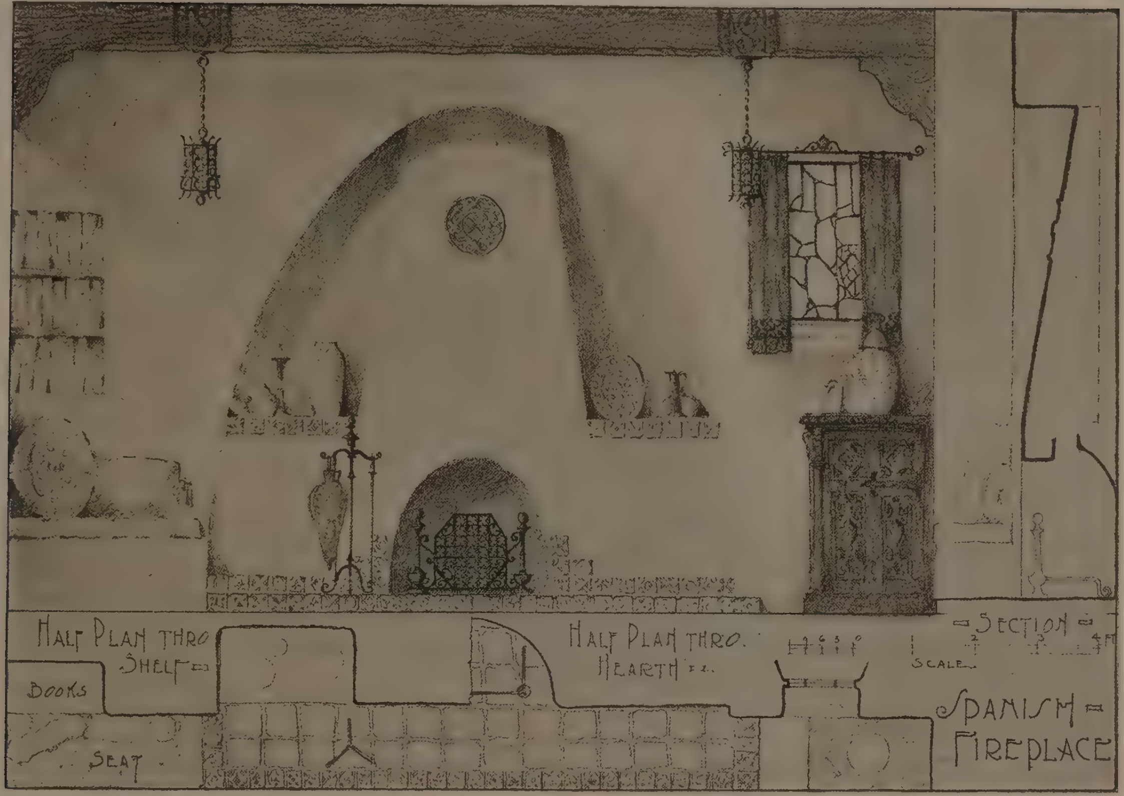
By H. Roy Kelley, Pasadena, Calif.



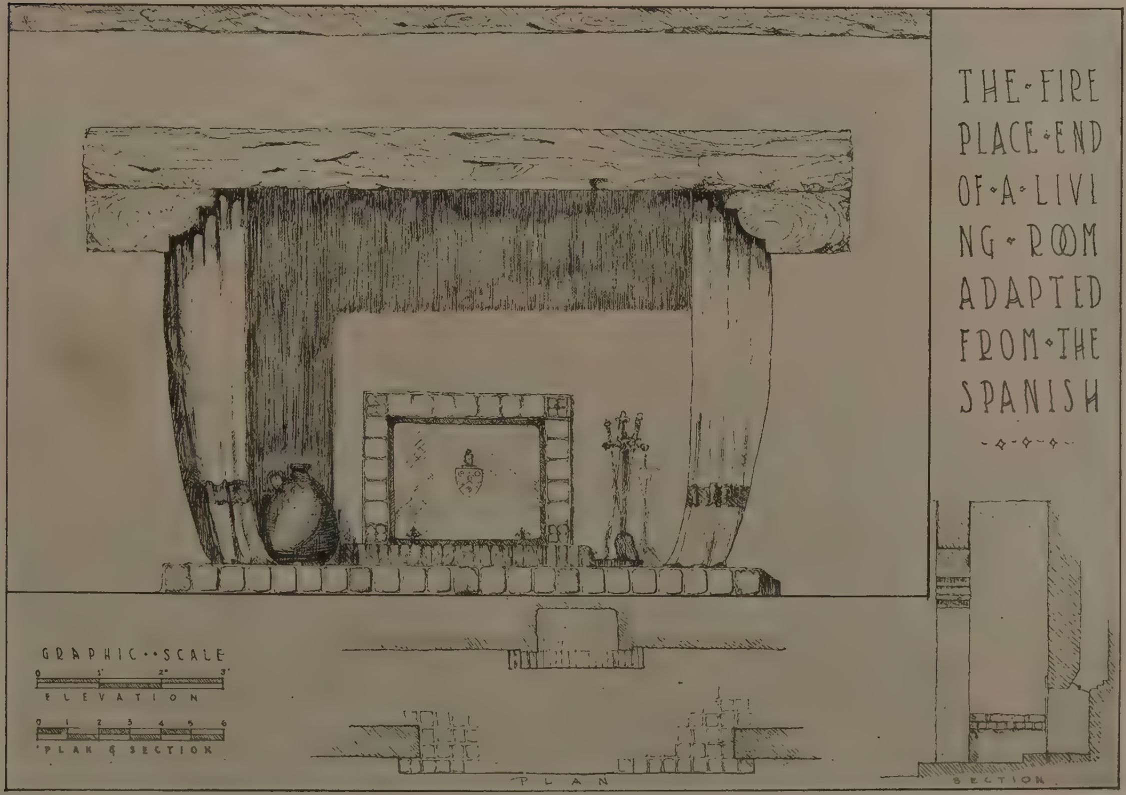
Third-Prize Design

By Malcolm P. Cameron, New York, N. Y.





Fourth-Prize Design By A. Redfern Cornwell, Hollywood, Calif.


The Fire Place End of a Living Room Adapted from the Spanish
Graphic Scale
Elevation
Plan & Section
Plan
Section

Fifth-Prize Design By A. A. Cooling, Urbana, Ill.

ARCHITECTURE'S COMPETITIONS

GENERAL CONDITIONS

Jury of Awards: H. Van Buren Magonigle, F. A. I. A., architect.

J. Monroe Hewlett, F. A. I. A., artist and architect.

Henry H. Saylor, Editor of ARCHITECTURE.

In the judgment of Competition IX, Mr. Alexander Buel Trowbridge, F. A. I. A., served in place of Mr. Hewlett, who was absent in the South.

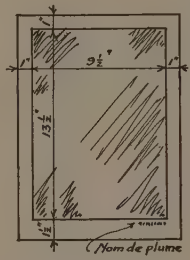
Compensation to Competitors: ARCHITECTURE will pay to the winners of each competition, immediately after receiving the jury's judgment, the following:

For	Design	placed	First....	$150.00
“	“	“	Second..	75.00
“	“	“	Third...	30.00 in books*
“	“	“	Fourth..	20.00 in books*
“	“	“	Fifth...	10.00 in books*

In addition to the above awards, which are made for each one of the monthly competitions, ARCHITECTURE will present three medals at the end of the twelfth competition, one of gold, one of silver, and one of bronze, to the three designs chosen from among the monthly winners which, in the opinion of the jury, show the greatest merit in design.

Eligibility: Architects, draftsmen, and students are invited to enter one or all of these monthly competitions. It is *not* necessary that a competitor be a subscriber to ARCHITECTURE. A competitor may submit one or more designs in any of these competitions, but not more than one prize will be awarded to a competitor in each.

Requirements: One sheet (paper, not cardboard) only is required for the presentation of each design. It must be exactly of the size indicated in the sketch diagram herewith, the border margins left blank excepting for the nom de plume or other identifying device. The drawing may be in line or wash, or both, but if in wash it should be in monochrome, preferably in India ink. Indicate all scales graphically. To preserve the anonymity of drawings, each is to be signed with a nom de plume which is also written upon the outside of a blank white envelope containing the competitor's name and address. Drawings may be sent flat or rolled, and are to be addressed "ARCHITECTURE, Competition No. XII, 597 Fifth Ave., New York, N. Y." The closing time given below is for receipt of entries at the office of ARCHITECTURE, rather than the closing by postmark date—this being necessary in order that judgments can be made and published in the following issue of the magazine. In justice to all, no questions regarding the competitions can be answered.



Drawings awarded prizes become the property of ARCHITECTURE for publication and for any other use at the publishers' discretion. Other drawings will be returned to the senders only if postage is included.

Programme for Competition XII

Competition XII. Closing March 1, 1928, at noon.

Subject: Owner's bathroom in a country house. Size: 5½ x 8½ feet; 8 feet high. Entrance in middle of longer side, with window opposite. Use any material desired for floor and walls. Show elevation of window side of room and both ends at ¾-inch scale. Indicate general character of material (*not* by trade names) and color scheme.

With Competition XII the series comes to a close. In accordance with the provisions set forth above under "General Conditions," ARCHITECTURE will present three medals after the close of Competition XII to the three designs chosen from the whole series which show the greatest merit in design.

After the medals have been awarded to the successful contestants in the series of twelve competitions, announcement of which will be made in the April issue, it is planned to inaugurate a new series. This second series, however, will not be conducted at the high rate of speed that has been maintained in the first. Once each month seems rather too frequent for the best results. Our second series will consist of four competitions, judged quarterly, with the same compensation as before, and again at the end of the series ARCHITECTURE will award its medals of gold, silver, and bronze.

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*These to be chosen from the Art and Architectural Catalogue of Charles Scribner's Sons.

The Architectural Clinic

CHARCOAL FOR WORKING-DRAWINGS

ILLUSTRATED BY REPRODUCTIONS
OF FRIEZE AND CEILING ORNAMENT
IN THE MODERN AMERICAN GALLERY, DETROIT INSTITUTE OF ARTS

ALL of the working-drawings of the Detroit Institute of Arts by Paul P. Cret (illustrated on pages 65–76) in which modelling of any sort occurred had such portions modelled in charcoal directly on the tracing-paper and later "fixed." The advantages are several, chiefest being that this gives the designer an adequate idea of his results in three dimensions, simplifies the drawing by eliminating many section lines showing relative relief, and furnishes the modeller with more information at a single glance than dozens of complicated and involved geometric projections. Where ornament occurred in connection with some prosaic but necessary constructional conditions, these latter and the boundaries for the ornament were drawn in pencil in the usual manner, then the ornament itself studied in charcoal and "fixed" when satisfactory. Where it was necessary to show sections, dimension lines, notes, figures, etc., over a tone of charcoal, red crayon pencil was used. Strangely enough, although the charcoal is a dense black, red crayon used over it will print the darker. Instead of the usual blueprints, which would give all the modelling a reversed sense, red-line prints were employed at but a trifle greater expense.

Modelled drawings as these illustrated not only are an advantageous means of study to the designer and a saving of time to the architect, but are also productive of better results. If the architect sends line-drawings to the modeller it means that when he goes to the shop to see his designs in the clay state, many of them are not at all what he visioned. It then takes a greater amount of his time to make his ideas clear to the modeller as he tries to manipulate the sticky clay with which he is not deft, than though he had originally wielded a stick of charcoal. It not infrequently happens that when an architect appears at the modeller's shop, the "boss" himself greets him with a wide, affable smile and some remark as: "Mr. Michael Angelo from McKim's was in and again admired your models tremendously! He thinks they are inspired." All hands stand deferentially back and cast admiring glances at the architect, who rather begins to think well of his models too and sees no good reason for making any changes. Had the architect first studied the problem with a sympathetic stick of charcoal in the frank atmosphere of the drafting-room, where no conspiring compliments put him off the track of high endeavor, that remark by Mr. Angelo would not have prevented the client from obtaining conscientious study of ornament nor hindered the architect from doing his best. Not many an architect handles clay as dexterously as pencil or charcoal, and not every architectural visitor to a modeller's shop has the critical courage to say what he thinks and demand all the changes in the clay he wants, if the modeller is clever enough to produce the impression that the poor chap does not know a good thing when he sees it. The same incapacity which the designer has for expressing himself in clay by deftly handling the varying-sized wire-looped instruments or the curved wooden ones, is present in parallel measure in the average modeller's inability readily to read geometric drawings having an infinitude of sections and dotted lines, as compared with an obvious shaded sketch without confusing notations and sections.

The system of modelling ornament directly on the working-drawings may be utilized with particular advantage in cases where there is to be no special modelling contract, but where various subcontractors are to do their own work and submit results for criticism. In terra-cotta, for example, it often occurs that the company is in another city and submits photographs of the models to the architect. In such instances it is obviously a potent advantage to both if at the outset the architect can give a comprehensive idea of what is wanted. If the modeller were to light his clay similarly to the architect's drawing, he would know to a fair degree of certainty whether or not he were on the right speedway.

William A. Boring, F. A. I. A., Director of the School of Architecture and Professor of Design, Columbia University

Clinton Lee Harris, Acting Head, Department of Architecture, Pennsylvania State College

George Harold Edgell, A. I. A., Professor of Fine Arts and Dean of the Faculty, School of Architecture, Harvard University

Francis Wynn Kervick, Professor of Architecture, University of Notre Dame

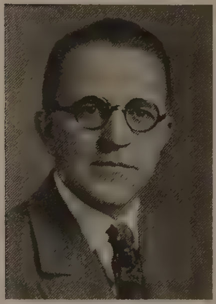
Warren Powers Laird, F. A. I. A., Professor of Architecture and Dean of the School of Fine Arts, University of Pennsylvania

Charles Wilson Killam, F. A. I. A., Professor of Architecture, Harvard University

Orion L. Stock, Associate Professor of Drawing and Architectural Engineering, Rose Polytechnic Institute

ARCHITECTURAL EDUCATORS

Men who
by precept and influence
are moulding
the next generation
of architects.



William Frank Hitchens, A. I. A., Head of Department of Architecture, Carnegie Institute of Technology

Underwood & Underwood Photo

Goldwin Goldsmith, A. I. A., Professor of Architecture, University of Kansas

Frederick William Revels, A. I. A., Professor of Architecture, Syracuse University

Harold Lancaster Butler, Dean of the College of Fine Arts, Syracuse University

Kennell-Ellis Photo

Ellis F. Lawrence, A. I. A. Dean of the School of Architecture and Allied Arts; Professor of Architecture, University of Oregon

Jacques Carlu, A. I. A., Professor of Architectural Design, Massachusetts Institute of Technology

Loring Harvey Provine, A. I. A., Professor of Architectural Engineering and Head of the Department of Architecture, University of Illinois

CONTACTS

DEVOTED TO A BETTER UNDERSTANDING OF THE BUSINESS SIDE OF ARCHITECTURE AND ITS RELATION TO THE INDUSTRIES

Why I Use "Or Equal"

By Robert W. Blodget

Of the Firm of Ludlow & Peabody

THE articles that have been printed in these pages regarding the "or equal" clause in architects' specifications are of very great interest.

I am one of those who believe that something in the nature of an "or equal" clause should be incorporated in the architect's specification, except in the rare instances where there are no equal-quality products to be obtained.

I have a number of reasons for believing this, and though I have heard, I think, all the usual arguments against it, my opinion has not been changed. I am frank to admit that the presence of an "or equal" clause in our specifications is responsible for a heavy expense to us. If we could satisfy ourselves that it would be proper to specify only a selection of materials which we knew to be of proper quality, we could handle our work at less cost than we do; but the trouble is, we cannot feel that we should avoid this expense, when we believe it would result in our clients' being involved in expense amounting to many times the extra cost to us.

At times it is very much of a nuisance, and we become impatient when we are asked in quick succession to approve for use numerous materials we have never used previously. It means we have to examine jobs where these materials have been used, test samples, consult architects, owners, and builders who have had experience with them, and develop all the information that is available regarding these materials, in order to render a fair decision.

We consider it, however, our duty as architects to maintain competitive conditions in supplying building materials, for, if a few manufacturers obtained a monopoly, the industry would quickly feel the effects of it in increased cost of building.

We think it is vital to the building industry that new materials and new manufacturers be allowed to participate in the bidding, and a "closed" specification, if used universally, would tend to close the market to new materials. Naturally, if an architect writes a "closed" specification, he will include only those materials he has had experience with, or which have been on the market for a long time, and are what might be termed "well known." Where then, are materials equally good, of less cost, but not so well known, to find a market? I do not agree with the argument that because a material is cheaper it must necessarily be inferior; I know of too many materials that sell at a higher price because of the "name."

It must be said also that although it may be true in the case of some manufacturers that there is one price for their product, and that it is the same whether they are specified outright or not, it has not proved to be the case in many instances which have come to our notice.

Naming three or four alternate materials in the specification does not answer the question fully. This provides limited competition, but may bar a dozen or more equally good materials, some of which might be obtained for less cost.

There are some materials we have occasion to use which cannot be furnished by any except one manufacturer. There are other cases where, to the best of our knowledge, only one of three or four materials would answer the requirements, but in the majority of cases a considerable number of materials are obtainable, which, while not exactly similar, are in effect "equal" in quality, and in the latter instances we open the matter to the fullest competition by some form of "or equal" clause.

I do not advance the "or equal" clause as a perfect solution of the problem, and it is, in fact, deserving of many of the slams the various writers have taken at it, but it has sufficient merit so that, until some better solution is proposed, we shall stick to it.

One of the criticisms I have read of the "or equal" clause is based on the assumption that the contractor estimates on using the material mentioned as a standard of quality, and then tries to persuade the architect to permit the use of an inferior and, because of this inferiority, cheaper material; and, if successful, the difference in cost is pure gain for him.

While it is possible for this to happen, I have found from experience that contractors do not, in general, estimate that way, particularly in this vicinity, where they have had experience working under an "or equal" specification. They take estimates on a number of materials they consider equal to the one named, and if they secure a lower estimate on a material which is well known and of reputation equal to that specified, they may use this figure in their estimate. Sometimes they will use the general average of the likely figures they receive. What transpires after the contract is let, is that the contractor makes an effort to satisfy the architect as to the quality and at the same time to buy the work at or under the price he allowed for it in his estimate. Sometimes he saves and sometimes he loses on these transactions.

Competition is too keen in this vicinity for contractors to adopt the policy of figuring on the most expensive materials that could possibly be required. They realize that architects, generally, who use the "or equal" clause do so with the deliberate intent of opening the field to competition in order to get a lower bid, and that the architects will not be so inconsistent as to require the use of the one material mentioned as a standard unless they fail to unearth a material that is, to all intents and purposes, of equal quality. Of course, in cases where we are not open to conviction, we specify a material outright with no "or equal" qualification.

Many contractors have genius as buyers, and I feel that the architects who fail to avail themselves of this by smothering contractors with a "closed specification" are losing the opportunity to save money for their clients.

We try to keep off our list contractors who have no interest in their work except for the profits they make from it, and we therefore generally find in those who bid for us a spirit of co-operation which will not permit them to press too hard for approval of questionable materials when we make an issue of their unsuitability.

My Experiences with Salesmen

Wherein They Succeed and How They Fail

WITH us it is not altogether "how" the salesman makes his approach, but principally "when"; we have a small but firm reminder posted in the outer office: "Salesmen will be seen after four o'clock."

Needless to say, local salesmen never infringe this rule more than once. Should they hail from Chicago or New York we are apt to forgive them for their error and difficulty in co-ordinating transcontinental train-time with our arbitrary schedule. So, often, we become gentle and listen respectfully, and with a certain amount of awe, to these gentlemen from the effete metropli.

We do not need to say that he should be well turned out; but most architects are susceptibly influenced by the well-fed and well-kept look.

A successful salesman should, to our way of thinking, be direct and to the point, yet he should not be apologetic about wasting "valuable time."

As a parting memento, let the salesman have concise information concerning his wares. If trap-doors, let there be accurate roughing-in data; let the souvenir also be direct and to the point with useful data, and not a portfolio of photographs showing by whom and in whose circles they are used and considered the *dernier cri*.

We prize salesmen for the real information they have about their products, not for their oratory, and when we are in a hurry we call those who can give us the so-called dope. The other kind won't do.

A. Glenn Stanton,
Of Morris H. Whitehouse and Associates,
Portland, Ore.

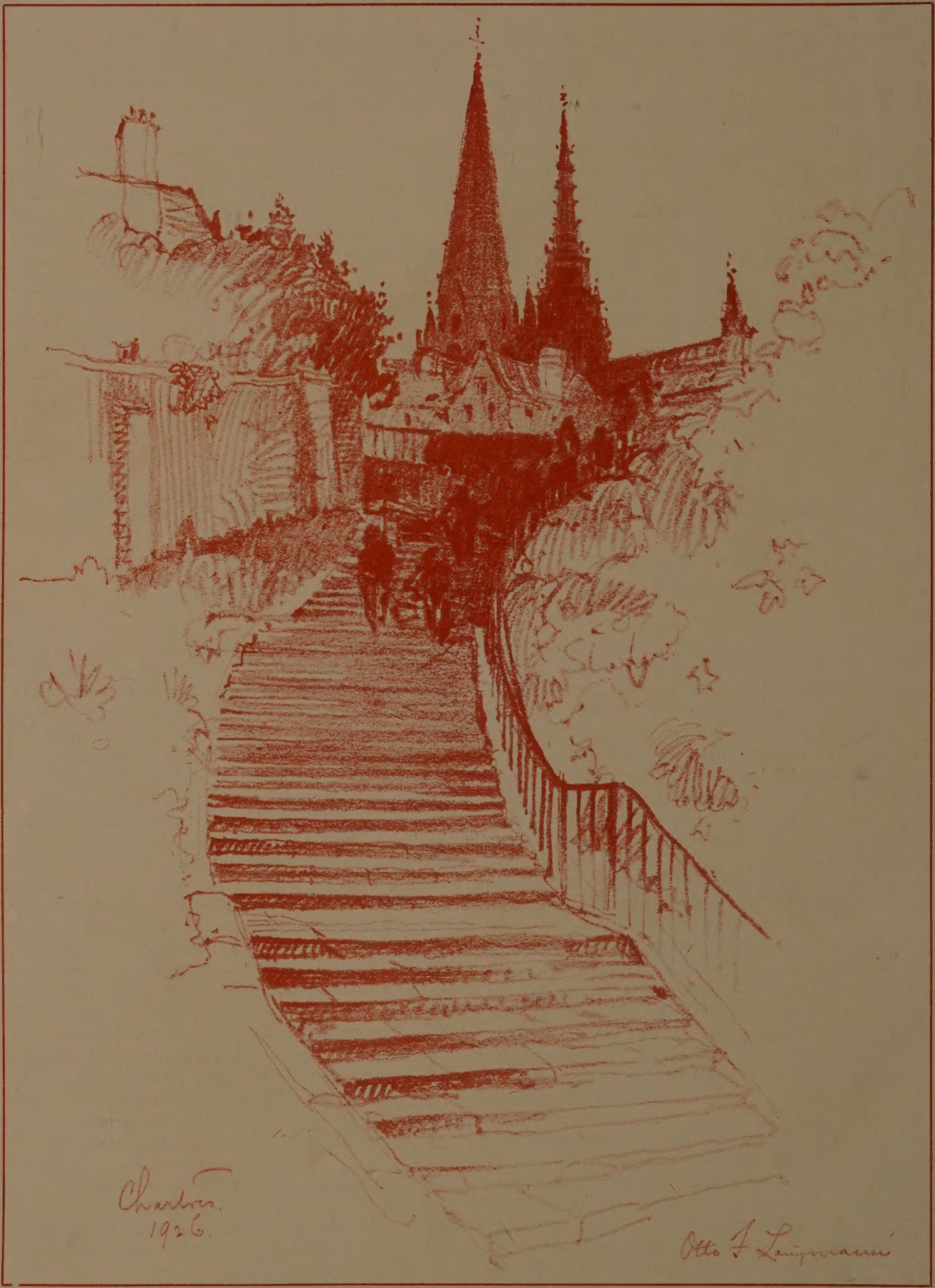
REGARDING salesmen to architects, I would say: In the first place, salesmen should be instructed to give name and business when they come into an architect's office. My memory for names and faces is not especially good and I find that the salesman coming into my office, of course, knows whom he expects to see and naturally recognizes me when he sees me; about 75 per cent of them do not give their names nor state their business, under the assumption that they have been in my office before and, therefore, I should know every one of them. Frequently, salesmen are sent out of an office with the information that we have nothing for them, because I am not going to ask them what concern they represent.

In the second place, I would tell salesmen that when they find an architect extremely busy it would be the part of good business to make their visits extremely short and omit the usual stories.

In the third place, I will not talk with a salesman who berates the product of his competitors. I have had occasion to order several salesmen out of my office for this sort of thing.

There are a great many salesmen who come to this office whom we are glad to see, feeling that they know their business and will be able to give me valuable information regarding their products. There are a great many others who know nothing whatever about the subject and are able to give only the most rudimentary information regarding their product; it is this class of salesmen that the architect wishes he might never have to see.

W. H. Sears,
Chattanooga, Tenn.



From the drawing, in Conté crayon, by Otto F. Langmann, New York

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